

**STATE OF IOWA
OFFICE OF AUDITOR OF STATE**

**SPECIAL REPORT
ON THE
IOWA COMMUNICATIONS NETWORK**

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Iowa Communications Network

Officials

Name

Title

Legislature

Harold G. Van Maanen	Speaker of the House
Brent Siegrist	House Majority Leader
Robert C. Arnould	House Minority Leader
Leonard L. Boswell	President of the Senate
Wally E. Horn	Senate Majority Leader
Jack Rife	Senate Minority Leader

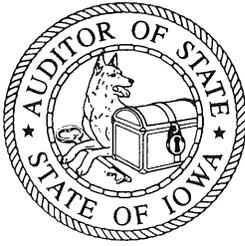
State

Honorable Terry E. Branstad	Governor
Gretchen H. Tegeler	Director, Department of Management
Dennis C. Prouty	Director, Legislative Fiscal Bureau
J. Michael Carlstrom	Director, Department of General Services
C. David Bolender	Director, Iowa Public Television
Ted Stilwill	Acting Director, Department of Education

Iowa Communications Network

Ted Chapler	Chief Executive Officer
Paul Carlson	Management Team Member
Robert Helmick	Management Team Counsel

Iowa Communications Network



**OFFICE OF AUDITOR OF STATE
STATE OF IOWA**

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To the Governor and Members of the General Assembly:

In accordance with Chapter 11 of the Iowa Code, and pursuant to Section 82 of Senate File 425, 76th General Assembly, we have examined expenditures made from the Iowa Communications Network fund and reviewed actions taken by the Iowa Public Broadcasting Board and the Department of General Services in relation to the Network. Our review covered the inception of the Network through June 30, 1993, with consideration of Part III activity through October, 1993.

The procedures we performed are summarized as follows:

- (1) We interviewed key personnel associated with the Network, including members of the Management Team, staff at various state agencies, the contractor and the construction consultant. As a result, we obtained an understanding of the Network and each individual's role, both past and present, and their views about Network development and management.
- (2) We reviewed the legislative history of the Network.
- (3) We reviewed reports prepared by various consultants.
- (4) We reviewed correspondence, financial reports, minutes and other documentation provided by state agencies, Management Team Counsel, the contractor and the construction consultant.
- (5) We utilized a specialist to evaluate the technical components of the final request for proposal (RFP), the contract, and subsequent change orders to the contract. In addition, we compared criteria in each document to determine what was requested and what was received.
- (6) We examined expenditures made from the Iowa Communications Network fund, and other expenditures associated with the Network.
- (7) We reviewed the two official statements for certificates of participation issued and evaluated the information presented therein.
- (8) We reviewed the handling of all proceeds from certificates of participation issued to finance construction, and appropriations received.
- (9) We evaluated, through November, 1993, the reasonableness of revenues and expenditures projected for the Network through fiscal year 1999, as reported by the Management Team.

- (10) We conducted follow-up interviews to clarify and confirm representations made by key personnel.

Our findings are presented in the Executive Summary, the Detailed Findings, and the Recommendations sections of this report. Additional information is included in the supplemental information and the Appendices section.

The procedures described above do not constitute an audit of financial statements conducted in accordance with generally accepted auditing standards. Had we performed additional procedures or had we performed an audit of financial statements, other matters might have come to our attention that would have been reported to you.

We extend our appreciation to the Office of the Governor and the Department of Management, members of the Legislature, the management and staff of the various state departments, the Network Management Team, the contractor and the construction consultant for their assistance during our review.



Richard D. Johnson, CPA
Auditor of State

November 30, 1993

EXECUTIVE SUMMARY

Since its inception, the Iowa Communications Network (Network) has been surrounded by controversy. This controversy culminated in a request from the Legislature, pursuant to Section 82 of Senate File 425, 76th General Assembly, that the Auditor of State conduct

"a comprehensive audit, as described in [Iowa Code] section 11.4, of the expenditures made from the state communications network fund and the actions taken by the Iowa public broadcasting board and the department of general services in relation to the state communications network. The auditor shall have access and authority to examine any and all records necessary to conduct the comprehensive audit. Any moneys necessary to conduct the audit shall be paid from the state communications network fund. The auditor shall complete the audit and present a copy of the findings to the general assembly and the governor by January 1, 1994."

As a result of this comprehensive audit, we have determined that the cumulative effects of many actions, rather than a single, "main" decision or action, have seriously hindered the effective design, construction, and operation of the Network. Those effects are characterized as follows:

1. **INADEQUATE ORGANIZATIONAL PLANNING.** While Iowa government was trying to be the first state in the nation to develop a network of this nature, it was doing so with no apparent consensus of critical priorities or objectives. In addition, the functional responsibilities assigned by the enabling statute did not provide for effective management of a project of this magnitude or its interrelated components. ***As a result, the project suffered from having no clear shared "vision" to be followed in its development, nor was there an adequately defined structure in place to determine and pursue that vision.***
2. **INADEQUATE FINANCIAL PLANNING.** ***Before deciding to construct the Network, and prior to the start of any construction, a long-range financing plan should have been developed.*** An adequate comprehensive financing plan would have included an analysis of financing necessary to pay the cost of constructing the Network, cost variations of design alternatives, and identification of the State's ability and willingness to fund the financing repayments from specific sources in reasonably anticipated amounts. Over 10% of the Network was built (\$11.4 million in costs incurred) before construction financing was obtained.

These effects are discussed in greater detail in the "Detailed Findings" section.

The Network is a statewide telecommunications system which will carry and switch full-motion interactive video for state agencies, colleges and universities, primary and secondary schools, hospitals, and other authorized participants. The Network will also carry and switch voice and data traffic for state agencies and other authorized users. When fully operational, the Network will consist of over 2,800 miles of high capacity fiber optic cable reaching every one of Iowa's 99 counties.

The Network is being developed in three parts, or "Phases." Phase I involved the installation of a Network Control Center at the Iowa National Guard Armory in Johnston, and the linking of Iowa's three Board of Regent universities, 15 community colleges, certain participating private colleges, Iowa Public Television, and the State Capitol Complex. Phase II involved linking the 15 community colleges and points of presence ("end points") in each of the remaining 84 Iowa counties.

The State contracted with Kiewit Network Technologies, Inc. (now MFS Technologies, Inc., or "MFS") in 1991 to construct Phases I and II of the Network. As of December 10, 1993, 114 of the anticipated 128 end points have been constructed, inspected, and accepted by Iowa Public Television. The remaining end point sites presently planned for Phases I and II are in various stages of construction.

Phase III will consist of expanding the Network to other authorized users within the counties, such as schools, libraries, hospitals, and other private and governmental users. **On December 9, 1993, the Network Management Team deferred the issuance of the request for proposal for Phase III until the Summer of 1994.** Implementation of Phase III is still planned to begin during the Summer of 1995.

From inception of the Network in 1989 through Fiscal Year 1993, \$9,027,623 from State appropriations to the Network have been spent. A total of \$92.2 million in proceeds from certificates of participation issued and directly related revenue have been spent through November 30, 1993. Total construction costs for Phases I and II of the Network are estimated to be \$96.2 million. This analysis does not include expenditures relating to the Network which have been paid out of other state agency's budgets, nor does it consider the "indirect" costs related to the use of state employees who have been working on Network design, construction, and management.

Certificates of participation, totaling \$114.5 million, were issued in 1992 and 1993 to finance the majority of construction costs. To date, financing costs for insurance, underwriting, bond counsel, financial consulting, printing, and other miscellaneous costs have totaled approximately \$4 million. Total principal and interest payments under the certificates are expected to be \$182.4 million.

In August of 1992, Governor Terry E. Branstad appointed an ad hoc, three member "Management Team" to investigate and evaluate various matters relating to construction and management of the Network, and to achieve better coordination between the agencies involved in the Network project through direct oversight by the Management Team. The Management Team's status was formalized on January 5, 1993, when the Governor signed Executive Order #46. **This Executive Order gave the Chief Executive Officer of the Network supervisory powers over the Network until a new administrative structure was statutorily established by the Legislature.** On January 19, 1993, the Governor appointed Ted R. Chapler as Chief Executive Officer of the Network. **The 1993 Legislature did not act to establish a new administrative structure.**

The Management Team has implemented many positive changes regarding the oversight of the Network, including better communications with relevant decision makers, the drafting of a proposed business plan for the Network, and more consistent day-to-day management of construction and Network operations. **However, fundamental problems with the Network still remain, and need to be addressed to protect the viability of the Network.**

The task of ensuring the future success of Iowa's fiber optic Network must begin with the following:

1. **ORGANIZATIONAL STRUCTURE:** The 1994 Legislature must establish an organizational structure which will provide for establishment and accomplishment of an overall strategic vision for the Network. That focus can be provided by establishing a separate agency or department of state government, headed by a senior level official appointed by the Governor and confirmed by the Legislature.
2. **NETWORK FINANCIAL OPERATIONS PLAN:** The financial concerns surrounding Phases I and II must be resolved. Projections for future revenue and operating expenditure for Phases I and II, many of which are still unsupported by adequate documentation, need to be firmly and realistically established so that the Governor and Legislature can make long range plans for the Network.
3. **PHASE III FINANCING AND CONSTRUCTION PLAN:** No action should be taken to start construction or implementation of Phase III until a comprehensive and reliable financing plan is set forth for Phase III and until the organization structure and Phases I and II financial operation recommendations are accomplished.

DETAILED FINDINGS

A. LACK OF SHARED VISION AND JOINT COMMITMENT BETWEEN EXECUTIVE & LEGISLATIVE BRANCHES:

In 1987, the State of Iowa embarked on a project to bring a fiber optic telecommunications "backbone" that would carry and switch full motion interactive video to educational classrooms throughout the state, as well as having the ability to carry and switch administrative (voice and data) traffic for state agencies.¹

Although Iowa was trying to be the first state in the nation to develop a statewide telecommunications network, various elements of the project were undertaken with no apparent consensus of critical priorities or objectives. This led to a shifting network design, and a situation wherein the telecommunications network was being simultaneously designed and built.

The lack of consensus of critical priorities or objectives is evident in the various legislation passed by the General Assembly. In the 1987 Regular Session, the Legislature approved, and the Governor signed, Senate File 162. This bill designated Iowa Public Television (IPTV) as the coordinating agency, through its Narrowcast System Advisory Committee, for potential educational applications of a statewide telecommunications network. Senate File 162 also required that the Iowa Public Broadcasting Board (Board) develop and adopt a design plan for a statewide educational telecommunications network by January 1, 1989, with updates being made to this plan every two years thereafter. This plan was to include:

"a list of public utilities and private telecommunications companies being utilized by the educational telecommunications system; the cost of the system; the fees or charges established for the system; and information on areas where construction is required because facilities are not available from private telecommunications companies."²

Also in the 1987 session, the Legislature enacted Senate File 333, which directed the Iowa Department of Education to evaluate, research, and adopt rules governing the use of two-way interactive video in educational classrooms in Iowa.

A formal request for proposal to construct the Iowa Educational Telecommunications Network, RFP #8598, was issued by IPTV on September 14, 1988. On November 30, 1988, responses were received from AT&T, Teleconnect, and Northern Telecom. A Notice of Intent to Award to Teleconnect was issued on January 5, 1989. A challenge to the Intent to Award was filed by other bidders, and the award was overturned on March 23, 1989.

On May 6, 1989, the final evening of the 1989 legislative session, the Legislature passed House File 774, which included a section authorizing the construction of the Iowa Communications Network (Network). House File 774, the appropriation bill for various educational institutions for Fiscal Year 1990, was adopted as a conference committee report which, according to the legislative rules in effect at the time of its passage, could not be amended and had to be either adopted or rejected. *Provisions establishing the Network*

¹ Dating as far back as 1978, officials within Iowa state government were working on a comprehensive statewide communications plan to handle state agency voice and data traffic.

² 1987 Iowa Acts Chapter 211, section 13(5).

were included as a result of negotiations between legislative leadership and the Governor, and had not been previously debated by the Legislature.

Pursuant to the statute, the Network was to be designed and built "with sufficient capacity to serve the video, data, and voice requirements of state agencies and the educational telecommunications system."³ The Department of General Services (DGS) was directed to develop requests for proposals to construct the Network, and was given responsibility for overall Network system design and the implementation of each component of the Network. The bill established a standing appropriation of \$10 million annually for fiscal years ending June 30, 1990, through June 30, 1994, (a total of \$50 million)⁴ even though there was no estimate of the total cost to construct the Network at that time.

Although DGS was given this substantial charge, key employees within DGS felt they were not involved in the preparation of relevant aspects of HF 774 until the last critical days prior to its passage. Those employees have stated that, at that point, there was not sufficient time or staffing to do in-depth analyses of certain aspects of the planned Network, including financial projections.

In addition, HF 774 split control over the Network between two agencies, DGS and IPTV. *This division of control ultimately led to many of the problems that hampered the design, construction and implementation of the Network.* As the Network was planned, the main function assumed by IPTV became the representation of interests within the educational community, while the main function of DGS was to design and build the Network with limited and constantly changing financial resources. These goals and objectives were often in conflict and, until the Governor formally established the Management Team by Executive Order in January, 1993, *there was no person or entity with final decision making authority over all aspects of Network construction and management other than the Governor.*

DGS was designated as the agency responsible for all management, operations, control switching, diagnostics, and maintenance functions of Phase I and Phase II of the Network. However, IPTV retained sole authority over the educational telecommunications applications of Phase I of the Network, including management and operational control, programming, budget, personnel, scheduling and program switching of educational material. In addition, the IPTV Board, through its Narrowcast System Advisory Committee, retained control over all educational telecommunications applications of Phases II and III.

Although DGS was given responsibility for design and implementation of the Network, the Governor did not allow additional funding or staffing to properly execute those duties. House File 774 appropriated \$250,000 to DGS in FY 1990 for "initial implementation stages of the network and for not more than four full-time equivalent positions for the purpose of assisting in the request for proposal." This appropriation, however, was item-vetoed by the Governor. In his veto message, the Governor noted that "the state's current staff and the expertise available within state government was deemed sufficient to meet this need." However, the Communications Division of DGS hired Spectra Associates, Inc., a telecommunications consultant, to assist in development of the request for proposals, evaluation of responses and contract development. In its request for approval to hire the consultant, DGS noted that one reason to contract for this service was to "provide expertise not currently available on the State payroll." DGS employees also participated, in addition to their normal duties, in preparing the request for proposals, and later remained

³ 1989 Iowa Acts Chapter 319, section 33.

⁴ 1989 Iowa Acts Chapter 319, section 34.

active in the bidding process, the refinement of the contract provisions, preparations for financing, and construction monitoring.

The first request for proposal in response to HF 774, RFP #9350, was issued on December 22, 1989. Responses were received from Telecom USA and Televenture. On August 6, 1990, the Director of DGS, Jack Walters, rejected the bids on the grounds that they were too costly. Between the time the RFP was issued and the bids were rejected, the Legislature, during the 1990 session, passed Senate File 2280, which decreased the \$50 million standing appropriation for the Network by \$20 million. SF 2280 decreased the annual appropriation from \$10 million to \$5 million for FY 90, FY 92, FY 93 and FY 94. It also eliminated the \$10 million appropriation for FY 91 and appropriated \$5 million annually for FY 95 and FY 96.

Walters instructed DGS employees to make revisions to the RFP in order to make the Network less costly. During the process of redrafting, critical assumptions were made quickly and the number of endpoints was drastically reduced in an attempt to reduce the bids to below \$100 million, a figure that the DGS Director felt would be acceptable to the Legislature.

Again with the assistance of Spectra Associates, DGS redrafted the request for proposals for the Network, and on October 3, 1990, issued RFP #51045S. The Network, as envisioned by this RFP, called for the construction of a "functional" educational network and a "nonfunctional" administrative network. ***The administrative network was "nonfunctional" in that additional equipment and system modifications would be necessary to fully carry and switch all state agency administrative (non-video) traffic.*** Extensive state agency administrative traffic was thus contemplated and planned as a future, potential addition to the Network. One of the vendors in response to the RFP suggested in writing that administrative traffic be planned at that time to avoid costly rearrangement of the Network if administrative traffic was added later. Officials from DGS noted, in a written response to all vendor's questions dated October 24, 1990, that such additions would be handled at a later point in time.

Bids in response to RFP #51045S were received from Kiewit Network Technologies and Televenture on November 21, 1990. Spectra assisted in the evaluation of the bids and recommended to DGS that the bid from Kiewit be accepted. DGS issued a Notice of Intent to Award to Kiewit on December 19, 1990.

Prior to the actual start of construction, however, the Legislative Council (Council) and the Department of Management (DOM) were required pursuant to HF 774 to certify that adequate funds were available to pay for Network construction costs. On January 15, 1991, DOM certified that such funds were available. At its January 10, 1991 meeting, the Council also certified that necessary funds were available for construction, subject to three conditions. The conditions specified by the Council were as follows:

1. DGS was to not sign a contract for construction of the Network until after April 5, 1991, although DGS was allowed to continue contract negotiations.
2. The Council's determination that adequate funds existed be approved, delayed, or rescinded by a majority of both houses of the Legislature no later than April 5, 1991.
3. In order that the Council and the Legislature could determine the feasibility of the project, the Council authorized the commission of an "independent

consulting firm with expertise in telecommunications" to prepare a comprehensive financial analysis of the proposed network.

Neither certification identified specific funds that were available and would be used to pay for Network construction.

On March 15, 1991, Ernst & Young presented the Council a financial analysis report, in which it recommended the State proceed with construction of the Network by Kiewit.

The Legislature did not satisfy the Council's second condition, that it approve, delay or rescind the Council's certification, despite two opportunities to do so:

- House Resolution 13 was introduced on April 9, 1991. It requested the Governor to delay implementation of the network until the State's financial condition improved, and was referred to the House Appropriations Committee on April 9, 1991. The committee took no action on the resolution.
- House Resolution 14, which was co-sponsored by 51 State Representatives, was introduced and referred to the House Appropriations Committee on April 12, 1991. Among other things, HR 14 prohibited expenditure of moneys in the Network fund until local exchange telephone utilities and the Iowa Telephone Association had a chance to report to the Legislature on their capabilities regarding the Network. The House Appropriations Committee also failed to take action on this resolution.

Through contract negotiations between Kiewit and DGS, Kiewit's original bid was reduced by approximately \$3.2 million. A construction contract for \$73,761,798 was signed between DGS and Kiewit on April 15, 1991.

Following the signing of the Network construction contract, and despite certifications by DOM and the Legislative Council that adequate funds for construction existed, the Legislature and the Governor acted to further reduce authorized appropriations to construct and support the Network. Senate File 532, a bill which "deappropriated" funds from various agencies of state government, was introduced on April 11, 1991, prior to the contract with Kiewit being signed. SF 532 deappropriated \$2,857,379 previously appropriated for the Network, and increased the portion of the remaining appropriations authorized for classroom demonstration programs. SF 532 was enacted by the Legislature on April 30, 1991, after the contract with Kiewit had been entered into, and was signed by the Governor on May 9, 1991.

On May 11, 1991, the Legislature approved House File 479, one of two omnibus appropriations bills enacted during the 1991 legislative session. Section 507.17 of the bill eliminated the FY 1992 standing appropriation to the State Communications Network Fund, thereby stopping FY 1992 funding for the Network. Section 507.17 of HF 479 was item vetoed by the Governor, on May 31, 1991. In his item veto message, the Governor stated:

I am unable to approve the item designated as Section 507, subsection 17, in its entirety. This provision would eliminate the funding in fiscal year 1992 for the Telecommunications Network. This project is an important investment in the education system of Iowa that will pay dividends in economic development for years to come. This is a commitment that has already been made; a contract has been signed

and federal funds secured. Only \$3 million of the \$5 million standing appropriation will be expended in fiscal year 1992.

The lack of sustained funding has continued through the 1992 and 1993 legislative sessions. On March 10, 1992, the Governor signed Senate File 2116 which had been enacted by the Legislature. Although he item vetoed several other sections of the bill, he approved the requirement that unobligated and unencumbered funds in the State Communications Network Fund revert to the State's general fund on June 30, 1992. Based on this section, \$2,000,000 was reverted to the general fund, the amount of FY 1992 appropriation that was unspent. Previously, unobligated and unencumbered funds would have been retained in the fund for expenditure on the Network.

During the 1993 legislative session, Senate File 233 was approved and was signed by the Governor. SF 233 eliminated the requirement that participating community colleges pay 20% of the construction cost to connect the community college to the Network. Although this did not increase the total cost to construct the Network, it did increase the State's share of Network costs by approximately \$6 million.

Many significant budgetary factors other than Network considerations entered into the decisions made by the Governor and Legislature regarding Network funding. Those decisions, however, are indicative of a lack of firm commitment, individually and jointly, to prioritize effective development of the Network by providing a continued strategic vision and sustained funding. ***Without a shared vision between the Legislature and the Governor, it was difficult, if not impossible, for either branch to determine the long term effects of the actions taken by the other branch.***

B. LACK OF SHARED VISION AND COOPERATION WITHIN EXECUTIVE BRANCH:

In addition to the lack of shared vision and joint commitment between the executive and legislative branches, problems developed within the Executive branch agencies (DGS and IPTV) responsible for designing and building the Network. ***During the course of our review, we found that DGS did not provide proper project management over the design or construction of the Network, and that IPTV carried out its role with little to no regard as to the impact its decisions were having on the cost or the construction of the Network.***

Senate File 162 designated the IPTV Board, through its Narrowcast System Advisory Committee, as the coordinator for potential educational applications of a statewide telecommunications network. In this role, IPTV's main focus was to represent the interests of the educational community.

IPTV failed to ensure that the educational community understood the potential uses and anticipated costs of the Network. When the construction contract between DGS and Kiewit was signed, many within the educational community, including local schools, did not fully understand what would be entailed in the construction of the Network. In particular, they had not developed long-range plans for the locations of the educational video classroom or the fiber optic terminal rooms. When the construction of the Network became a reality, it took some time before adequate plans were developed, and specific locations for video classrooms were identified at the end points. This ultimately caused delays in construction of the Network.

Construction delays were also caused by the procedures that were established by IPTV in regards to site visits, room selection, cable routing and generator/fuel tank placement. In a letter dated March 14, 1992, from Kiewit to the Construction Manager of the Network, Anthony Crandell, Kiewit indicated that the process being used by IPTV for these matters was

a very lengthy, time consuming process that was not yielding timely results. Kiewit representatives indicated that they had urged IPTV to streamline or simplify the processes, but had met with very little success. Kiewit requested assistance from DGS to improve the working relationship with IPTV (see **Appendix 1** for a copy of this letter).

However, DGS was ill-equipped to handle its charge from the Legislature, as demonstrated by its inadequate management over the Network project. Many of the management problems within DGS can be attributed to changing leadership at the time. During this managerial transition stage, critical decisions were being made regarding the design and construction of the Network, such as equipment specifications, site selection, and the anticipated construction schedule. ***The lack of a director who was in firm control of the department or the Network project seriously hampered DGS decision making.***

Jack Walters, DGS Director while the Network project was being designed, retired from his position in late February, 1991. Walters was replaced by Kathleen Williams, who served as Acting Director until April 22, 1991.⁵ Gerald Anderson took over as DGS Director one week after the contract with Kiewit was signed, and served in that capacity until he resigned his position on November 6, 1992.

Prior to being named as Acting Director, Williams served DGS as Records Division Administrator and as the DGS liaison to the Legislature. Williams had no previous experience with telecommunications systems design or construction. Anderson indicated that he came to the Director's job with the understanding that he would not need to become heavily involved in day-to-day Network affairs. Given that the majority of Anderson's previous work history was related to telecommunications his input into a project of this magnitude should have been essential. Both Williams and Crandell noted that they met daily and at length with Anderson to answer questions and keep him informed on the progress of the Network.

In addition, although having been given a sweeping charge to build a statewide telecommunications network from the Legislature in 1989, DGS did not adopt written policies and procedures for Network development, implementation or operation. No mission statement, revenue or expenditure projections, business plan or administrative rules were prepared during this time frame. Anthony Crandell, presently the Communications Division Director for DGS, indicated that in the Fall of 1989, he was working at the direction of Jack Walters on draft administrative rules for the Network regarding "ON NET" administrative traffic, i.e., only among users who were "on" the Network such as users within the educational community. These draft rules were never filed nor acted upon.

In 1990, DGS was directed by the Legislature to employ a consultant to report on the impact of changing technology on the cost and capabilities of the Network during the implementation of Phases I and II.⁶ Spectra Associates, the consultant DGS hired to draft the RFP, review the bids and assist in developing the contract for construction of Phases I and II, was not used after the Network contract was signed due to an apparent lack of funds for consulting activity. However, in January of 1992, Warren Fackler of Spectra Associates prepared and delivered a draft report to the Department of General Services titled "The Impact of Changing Technology on the Iowa Communications Network." Mr. Fackler noted it was a "very rough draft" and wanted to know if he should complete the report. Dean Crocker, an engineer at DGS, noted that he felt it was "too generic" and "did not say anything," and no further action was taken by DGS on the draft.

⁵ Williams was later named Communications Division Administrator of DGS in July of 1991, a position she held until November 5, 1993. Williams now serves as an Executive Assistant to the Director of DGS.

⁶ 1990 Iowa Acts Chapter 1266, section 35.

Approximately one and one-half years later, the Management Team hired Don Deeds to be the Network's construction consultant. Mr. Deeds had previously worked for Spectra and was instrumental in the original evaluation of Network bids and contract development. During the time that no outside consultant was utilized, DGS utilized its engineers and the experience of Kiewit for technical questions.

Kiewit had anticipated beginning construction shortly after the contract was signed in April of 1991. However, critical decisions, such as what type of fiber cable to use, what specific sites would be selected for Phases I and II, and the use of Department of Transportation right-of-ways along various Iowa highways were not being resolved within DGS. ***During the summer months of 1991, representatives from Kiewit began notifying DGS officials that construction was being hampered by the lack of decision on these and other matters.***

DGS officials stated one of the main reasons construction was being delayed was the concern of DGS Director Anderson that adequate funds were not available for payment of construction costs, even though both DOM and the Legislative Council had certified the availability of sufficient funds several months earlier. At this point, DGS employees still had not prepared a comprehensive revenue and expenditure report regarding Network operations.

With the assistance of the Attorney General's office, Williams drafted a letter for Anderson's signature authorizing Kiewit to begin construction. According to Williams, Anderson refused to sign this letter and verbally authorized Williams to sign the letter. In a letter dated September 25, 1991, Williams communicated to Kiewit:

...

The contract, #2102, General Services has signed with Kiewit states in section 2.18 that we must provide proof of funds sufficient to pay for any segment link upon request. We have approximately \$1.7 million available to pay for construction at this time. The Department, in cooperation with the State Treasurer's Office, is working with the Iowa Communications Network Financial Team to prepare for the issuance of Certificates of Participation. At the present time we anticipate that funds to pay for construction should be available prior to the end of November.

We understand that as a result of this letter you will begin mobilizing and starting construction as per the DOT permits issued. As this letter indicates the State does not have the financing completed at this time. Knowing this to be the case, if KNT wishes to proceed with construction, you will have our cooperation.

(See **Appendix 2** for a copy of this letter.)

Construction began shortly after this letter was communicated to Kiewit, despite the fact that the State did not have sufficient funds available to pay for the anticipated construction costs. Pursuant to the terms of the contract, Kiewit was proceeding at its own risk for many of the construction costs. The contract did contain provisions relating to the damages due to Kiewit in the event of contract cancellation. In a letter dated November 6, 1991, representatives from Kiewit stated that in the event of contract cancellation, the State of Iowa would be liable for damages totaling approximately \$22.3 million, although this amount was disputed (see **Appendix 3** for a copy of this letter).

Personnel from various State agencies were serving on a financing team preparing for the issuance of certificates of participation (COPS) to pay for construction costs. The COPS were not issued until April of 1992, a full year after the construction contract was signed. During that year, the State incurred storage charges of \$83,413 while Kiewit waited for the State to authorize the start of construction. After construction started, and during the period of October, 1991 through April, 1992, Kiewit billed the State over \$11 million for construction costs. Because the State did not have adequate resources to pay these bills, late fees totaling \$111,817 were also assessed by Kiewit.

The COPS issuance of April, 1992 was in the principal amount of \$96,030,000. Of this amount, \$72,212,055 was allocated to pay for construction, with the balance being used to pay the cost of issuance (\$3,679,580) and to retain reserves (\$20,138,365) for the payment of interest until the Network could generate sufficient revenue to make interest and principal payments. Projections of Network revenues were first developed by the financial advisor while preparing for the COPS issuance.

The financial projections relied heavily on revenue from extensive administrative traffic to repay the COPS. The Official Statement for the COPS issuance included the following representations concerning administrative traffic:

- The "Purposes of the Network" section stated that "The Network is intended to provide state agencies, libraries and various educational users with efficient voice and data communications, as well as video teleconferencing capabilities...As access to the Network becomes available, the Department of General Services, the current operator of communications systems for many State agencies, will convert the voice and data communications of the agencies to the Network."
- The "Revenue Sources and Expenses" section identified approximately \$7.5 million of annual administrative traffic user fees for services that could be provided by the Network.

While DGS and the Management Team determined that adding extensive administrative traffic was necessary in order to generate sufficient cash flow to pay Network obligations, this addition constituted a major shift in the direction of the Network. As previously noted, the State's RFP and Kiewit's contract were for an educational video network with extensive administrative use seen as a future, potential addition. The decision to implement this major shift was not timely communicated to State agencies which were expected to become major customers of the Network, and they were not advised to avoid long term communications contracts with private carriers. We were advised that a letter of notification to the agencies had been drafted and discussed at that time, but it had not been issued. The directive was finally issued in August of 1993 by DOM. We have been unable to determine if any significant administrative traffic will not be carried on the Network due to the failure to timely notify agencies not to contract with private carriers.

However, in order for the Network to dependably handle a significantly increased amount of administrative traffic, design modifications, such as different switching equipment and backup alternate system routing, would be necessary. Despite having official roles on the financing team preparing for the COPS issuance and with Network operations through her position within DGS, Williams did not communicate the need for additional Network systems design to switch and carry the amount of administrative traffic planned for by the financing team, nor did she communicate the need for a construction contingency fund. Although Williams stated that she was instructed by Anderson not to disclose the need for additional systems design or the need for a contingency fund to other members of the financing team,

Anderson disputes ever making this statement, and stated that there was no intent on the part of DGS to withhold information from the financing team. Williams subsequently informed members of the financing team of these needs in the Summer of 1992, after the issuance of the COPS. ***As a result of this inadequate communication, the State was subsequently forced to issue a second COPS in May of 1993 to help pay for the additional construction costs to handle the administrative traffic.***

The second COPS issuance was for \$18,500,000. Of the amount issued, \$16,550,266 was allocated to pay for construction costs, \$1,838,919 was held as a reserve, and \$110,815 was deducted as original issue discount. An additional \$550,459 was paid as issuance costs from the Network's legislative appropriation.

Change Order Number 9, prepared on September 28, 1992, added a \$3.3 million local tandem switch that would allow the Network to handle an increased amount of administrative traffic. Change Order #11, also prepared on September 28, 1992, added \$4.9 million for alternate routing, a necessary element of the Network once the decision was made to carry and switch extensive administrative traffic. As stated in the Official Statement for the second COPS issuance, "The \$11.5 million additional costs included alternate routing to prevent loss of service on key portions of the Network, a local tandem switch adequate for expected administrative traffic, other equipment enhancements and protective devices." The Official Statement for the first COPS issuance represented that alternate routing was already included in the Network design at that time.

The Attorney General's office, in correspondence to Ted Chapler dated May 4 and May 26, 1993, determined that the necessary design changes to add administrative traffic did not alter "the fundamental design or purpose" of the Network, thus avoiding the need for a separate bid on such changes (see **Appendices 4 and 5** for copies of these letters). ***The Legislative Council and other relevant decision makers were not informed about this major shift in Network direction.***

A comparison of the RFP to the Kiewit contract and the subsequent contract change orders was performed for this office by an Associate Professor in the Department of Electrical and Computer Engineering at Iowa State University. This telecommunications specialist reported to us:

After reviewing all of the material, I have several conclusions as listed below:

1. During the course of the contract with [Kiewit] the State of Iowa appeared to change the direction of focus for the ICN from an educational network to a network that will handle both administrative traffic as well as the educational traffic. This change in focus is contrary to the RFP which deferred administrative traffic for future development and allowed [Kiewit] to determine the type of administrative network that the state would build. It is my opinion that this administrative network should have been sent out for bid to allow alternate and possibly more cost effective solutions to be evaluated.
2. If the State of Iowa is planning on creating a network to support voice traffic for other than state agencies (i.e. local, and county government) the issue of tariffs should be addressed. The traffic would cross the boundaries established by the Federal Government and might be subject to the same rules and regulations that apply to the telephone companies. The State might be open to a lawsuit if they start competing with the local telephone companies or with the long distance providers.

3. [Kiewit] placed a centralized tandem switch for the switched voice network. This forces the State into operating its own phone company. There are other ways to handle the voice traffic using the backbone network. Again it is my opinion that other methods for providing voice traffic should have been evaluated and that the addition of the tandem switch was not part of the RFP.
4. In conclusion I think that [Kiewit] provided items beyond the scope of the RFP as shown in some of the change orders. I did not find justification for these additions and therefore these additions should have been sent out for bid. The two change orders in question (#9, #11) were not covered by the RFP. It appears that [Kiewit] responded to the change in direction of the ICN from an educational network to an administrative/educational network by adding the tandem switch. Therefore I do not think [Kiewit] is solely responsible for the additional items. The State of Iowa has driven these changes. I also do not think that the current design for the administrative traffic is the only or even the best solution possible and should have been delayed until Phase III.

Change orders for work in progress are common, especially for projects of this magnitude. As of the date of this report, 34 change orders have been approved, and all related expenditures are considered as additions to the contract and not costs that were part of the contract as written (see **Schedule 2** for a list and explanation of all change orders).

On the Network project, initial change orders which would have authorized Kiewit to make construction changes were not authorized in a timely manner. In lieu of change orders, "letters of intent" were prepared and approved by either Crandell or Williams. The purpose of each letter of intent was to authorize Kiewit to proceed with work that was outside the scope of the original contract but deemed "necessary." Each letter of intent was to be followed up at a later date with a formal change order. ***Letters of intent are not common in State projects, and were apparently used only for Network construction.***

None of the letters of intent were officially authorized or signed by Anderson. Williams stated that Anderson was aware of these letters. Crandell noted that he didn't specifically request authorization from Anderson but knew, along with Kiewit, that the proposed work was "necessary" and would result in cost savings if the work was done quickly rather than waiting for a formal change order. These letters of intent committed the State to additional expenditures of \$8.7 million. (See **Appendix 6** for a summary of the letters and copies of two of the letters.)

Prior to the Management Team being appointed, 8 change orders were signed. These change orders, some of which formalized the construction changes previously authorized by the letters of intent, added \$8.5 million to the original contract price. None of the change orders were signed by Anderson. Williams stated that she signed the change orders after receiving verbal authorization from Anderson. Once the Management Team assumed its duties, 10 change orders were signed by members of the Management Team in their capacities as "ICN Construction Manager," including Change Orders #9 and #11, described above. Beginning with Change Order #19, members of the Management Team have initialed their receipt of the change orders, and Crandell has signed for DGS in his capacity as ICN Construction Manager.

Lack of effective DGS decision making also impacted the maintenance agreement covering the Network. In the contract between Kiewit and the State, maintenance and warranty costs were estimated at approximately \$2 million annually. The contract allowed Kiewit to negotiate a maintenance agreement with another vendor at a later date, subject to

the approval of the DGS Director. After negotiating only with McLeod Communications, Kiewit subcontracted with McLeod for maintenance of the Network. Although competitive bidding for the assignment of the maintenance contract was not a specific requirement of the contract between the State and Kiewit, a separate provision did require that "all subcontractors be procured with adequate attention to the principles of competition."

Responsibility for maintenance was not assigned in accordance with the terms of the contract. Kiewit did not want to remain liable or responsible for ongoing maintenance of the Network, and requested that it be able to assign its role to McLeod. Anderson expressed reservations about Kiewit's request to assign all liability to another party. The contract did not allow Kiewit to assign its obligations without written permission from the DGS Director. The Management Team wanted Anderson to approve the maintenance assignment in order to reassure the insurer of the first COPS issuance that "experience" was being brought into the management of the Network. The Management Team communicated this request to Anderson on October 1, 1992. On October 9, 1992, Williams, at the direction of the Management Team, signed a contract addendum releasing Kiewit of all obligations or liability for the maintenance of the Network. On October 20, 1992, Williams sent a letter to Kiewit that approved the use of McLeod as a subcontractor for assignment of the maintenance agreement. Under the terms of the contract, Williams did not have the authority to release Kiewit of all liability or responsibility associated with maintenance of the Network.

The contract between Kiewit and McLeod committed the State to a ten year maintenance agreement with a first year total cost of approximately \$2.6 million for designated segments, to increase each year by the change in the consumer price index and additional segments covered. The State has the option to renew the maintenance agreement for two additional five year terms. The main components of the contract are the services and training of 22 people, a parts inventory and specialized maintenance and repair equipment.

The maintenance agreement limits the business risk for McLeod Communications as follows:

- (1) McLeod provides a specified maintenance and repair parts inventory, but the cost to replenish the inventory is the responsibility of the State.
- (2) The State pays for overtime costs, as long as McLeod incurs a like amount of hours performing cable locate services for the Network. This time is billed at \$40 per hour.
- (3) If McLeod determines that current staffing is inadequate to perform services under the maintenance agreement, they can negotiate with the State to add additional staff at additional cost.
- (4) Charges to the State automatically increase each year by the same percentage as the change in the consumer price index.
- (5) Additional segments or equipment will be added to the maintenance agreement at a cost of 3% of purchase price.

This maintenance contract does not cover classroom equipment and State officials have not yet made a decision on how this equipment will be maintained. Classroom equipment is currently under a one year warranty with the vendor. IPTV officials intend to be involved in decisions on enhancements to classroom equipment and envision a centralized parts inventory at their Agency.

From the critical beginning stages of the Network through the Summer of 1992, the Executive branch did not exercise effective project management over the design and construction of the Network. The Legislature bears part of the responsibility for the uncoordinated development of the Network due to continually changing the authorized funding and dividing control over Network components. However, once given the charge to build the Network, the Executive branch agencies responsible failed to effectively carry out their mission.

Throughout the Network's early history, there has been no administrative structure in place to ensure successful development or accomplishment of the Network's strategic goals. The lack of coordination of efforts and cooperation between agencies involved, significant financial decisions made without apparent prior knowledge or concurrence by all major parties, and the lack of direct accountability, have severely hampered the State's planning of the Network. Because of this lack of coordination and communication, it has been necessary to continually react. While the Governor's appointment of a Management Team was a needed improvement, many of the problems already encountered could have been prevented by action at inception of the Network.

C. FINANCIAL IMPLICATIONS OF NETWORK DEVELOPMENT

As a result of the actions described earlier in this report, the current financial projections for the Network show an estimated accumulated deficit of almost \$26 million by the end of FY 99, assuming the current \$5 million legislative appropriation is extended into Fiscal Years 1997 through 1999. Without the appropriation extension, the deficit would approach \$41 million. For FY 95 alone, a deficit of more than \$6.7 million is currently projected. Based on these projected results, the Network will not operate as a financially solvent and viable operation. (See **Appendix 7** for the projection summary.)

Actual results, however, often vary significantly from projections, sometimes because of factors which are not controllable. In the case of the Network, a significant factor beyond the Network's immediate control, once service capability is provided, is the amount of usage initiated by other parties. To be successful, the Network management would ideally be able to predict all significant future events accurately. Because of a lack of historical data and experience to base such projections on, these projections must rely more heavily on the judgment of individuals involved in Network operations. As a result, management of the Network must be able to identify what projections were not met and, more importantly, why such projections were not met and the future implications of those reasons if the Network is to be successful without major increases in State appropriations to subsidize its operations.

To achieve this position, a documented record of the facts relied upon and the assumptions made in preparing the projections must be maintained. In the case of the Network, we found this documented record to be inadequate. Adequate documentation of all significant factors considered in preparing the projections, including those arising from individual judgment, must be prepared.

Based on our analysis of the Management Team's projections, we believe the following items must be considered as the Network and its operations are evaluated.

• Network Operating Revenues

Iowa Code Section 18.136, subsection 11, states: "The fees charged for use of the network shall be based on the ongoing operational costs of the network only." This provision prohibits usage fees from being established at levels where they could generate revenue to be used to pay interest and principal on the COPS issued to construct the Network. While this would help minimize the cost to users of the Network, it would also require State

appropriations or other revenues of approximately \$13.5 million each year if the COPS and interest are to be paid when due. Total principal and interest payments over the life of the COPS could total more than \$182 million.

Financial projections for the Network include annual operating revenue in excess of operating costs for each fiscal year from FY 95 through FY 99. If usage rates are required to be established to avoid generating operating profits, between \$1.9 million and \$4.3 million of operating revenue will not be available each of those years to help pay the annual debt service costs.

The Legislature should determine whether this was the intended result or whether statutory modification is appropriate.

• Network Rate Setting

To establish reasonable rates for Network usage, it is vital to determine the costs of providing various types of service. Ongoing operating revenue will be generated by providing voice, video and data traffic. Revenue projections for each type of service have not been calculated to consider the current cost to provide each type of service.

Voice and data traffic revenue has been based primarily on prior expenditures by Network users. Video traffic revenue is based on a \$5 per hour rate initially determined in 1991, under dramatically different circumstances and assumptions.

The 1991 video rate calculation was requested by Jack Walters, then Director of DGS, and was performed by the construction consultant. In making the calculation, only the projected annual maintenance cost of \$1.8 million was considered, split equally between educational and administrative traffic. In addition, the educational share was spread over the projected annual usage of 2,160 hours by each of 103 educational users.

This rate was informally communicated in 1991 to IPTV, which then communicated it to expected educational users. It is the rate currently charged, has been strongly supported by IPTV as the "appropriate" rate, and is the rate on which current revenue projections for video use are calculated.

Currently, annual operating expenses are projected to total more than \$6 million in FY 94 and increase to over \$7.3 million for FY 99, excluding potential Network management costs by either DGS or IPTV. These expenses must be considered in determining all rates, as should current determinations of expected usage and the allocation of expenses between educational and administrative functions.

The projection of 2,160 hours of annual usage at each educational endpoint appears unrealistic. This would require usage at 10 hours per day, 6 days per week for 36 weeks per year. Since usage is a significant factor in determining rates, this usage rate should be reevaluated, based on current information and experience, to determine if it is likely to be reached and, if so, after what length of time since initial participation in the Network.

The allocation of expenses was originally projected to be evenly divided between the educational and administrative functions of the Network. However, this allocation was determined when the Network was designed primarily for educational use with limited administrative traffic. Based on significantly expanded administrative traffic in the current Network design, this allocation should be reevaluated.

To evaluate the reasonableness of Network revenue rates, the Legislature should require that a mechanism be established in order to determine the cost of providing Network services. This mechanism could be through the Administrative Rules process or through a rate setting process similar to that required for various utilities throughout the state. As additional users are added to the Network, the rate setting process becomes even more critical.

• Voice Traffic Revenue

Although most of the projected voice traffic revenue is to be generated from State agencies, not all agencies or facilities are required to use the Network for their communication needs. DGS is in the process of switching phone traffic in the Capitol Complex to the Network. The Board of Regents institutions have recently committed to use Network services, and are being switched to the Network on an incremental basis. **To ensure maximum efficient utilization of the Network, the Legislature should consider requiring all State agencies to utilize the Network unless legal considerations such as outstanding bond issues preclude Network usage.**

• Educational Video Rate

A key function of the Network is the provision of distance learning opportunities at educational institutions throughout the state. Phases I and II of the Network establish a point of presence in each of Iowa's 99 counties, some of which include the three State universities, the 15 community colleges and 53 high schools. The remainder of the high schools are anticipated to be connected to the Network during Phase III.

The educational benefits intended to be provided through the Network may be significantly encouraged by an educational video rate which does not fully cover the cost of providing Network service. However, this creates an educational subsidy to the extent that the rates do not fully cover Network operating costs and State appropriations and other sources must be used to pay unreimbursed operating expenses. **The amount of educational subsidy should be determined annually by the Legislature, as are other educational funding matters, rather than by administrative action.**

State law does not require the fees to be charged on an hourly basis. Because the operating expenses incurred by the State to provide video capability do not include the cost of construction, the Legislature may choose to require an annual fee for service availability and a predetermined amount of service, with additional service being charged on a per hour basis. This option and others which may be developed should be considered by the Legislature in order to generate sufficient revenue for the Network while doing so on an equitable basis for the users.

• IPTV Transmitter Sites

Through a Change Order to Kiewit's construction contract in June, 1992, IPTV's eight transmitter sites were connected to the Network at a cost of \$1,976,800. Service for five of the sites was previously leased from AT&T, while the other three sites were served by IPTV microwave equipment. Formal request for these connections was made in a letter dated September 30, 1991, from George Carpenter, Executive Director of IPTV, to Gerald Anderson, Director of DGS.

As compensation for the Network connection, IPTV agreed to pay the Network the same fee that IPTV had been paying to AT&T. In doing so, IPTV received enhanced service to eight sites for the same cost it had paid for previous service to five sites and additionally avoided a future cost increase of approximately \$250,000 for the five transmitters served by AT&T.

Current projections anticipate revenues of \$562,080 from IPTV in FY 94. While IPTV's budget request for FY 95 reflects a cost of \$562,080 to the Network, the Network projections anticipate an increase in payments to \$899,200 from IPTV to the Network.

IPTV and the Network should agree on the payments for FY 95. In addition, and particularly since the agreement and payment terms for this addition to the Network was determined by the Directors of the two major agencies involved in the design and operation of the Network, the payment amount and terms should be reviewed annually to ensure that the Network is adequately compensated by IPTV for the services provided. ***In addition, the 1994 Legislature must reconcile the \$330,000 shortfall in the IPTV budget request.***

RECOMMENDATIONS

As described in the Detailed Findings section of this report, the current status of the Network is the result of the actions of many individuals, not any one individual in particular. The Legislature originally authorized and funded the Network, but it later diminished and even tried to eliminate funding for its construction. The Governor reinstated funding which the Legislature acted to eliminate, but item-vetoed funding for additional personnel who could have had a positive influence on Network operations. Finally, State agency personnel, faced with an ever changing financial scenario and conflicting demands, were not guided by a single, consensus focus of what the Network was intended to accomplish.

To provide a Network with the greatest possible opportunity to achieve the benefits envisioned when it was initially authorized, we believe the following actions must be taken:

1. ESTABLISH A NEW ORGANIZATIONAL STRUCTURE FOR THE NETWORK

To provide for adequately planned and orderly use and future development, a total statewide perspective for the Network must be developed and then must remain the focal point guiding its operations. The current structure, with responsibilities divided between the Department of General Services, Iowa Public Television, the Governor's designated Management Team and other staff having responsibilities outside the Network does not readily provide the necessary focus.

Creation of a new State department through consolidation of functions currently existing within the Department of General Services and Iowa Public Television would provide the necessary focus. Consolidation of these functions would bring direct accountability for the Network to a single department whose director is appointed by the Governor and confirmed by the Senate. It would also recognize that a project of this magnitude requires a full-time management staff to handle day-to-day operations and would facilitate those day-to-day operations by bringing sufficient technical and managerial staff together.

The Department's responsibilities would include recommending what the Network's statewide objectives should be and achieving the objectives that are legislatively established. Development of these statewide objectives must consider potentially conflicting interests, such as educational opportunities, economic development opportunities, and efficiencies in government operations. Each of these interests can be satisfied, but the cost may be more than State and local governments and other Network users can afford. Development and achievement of the Network's objectives must include continual reassessment of the Network's benefits to users in relation to the financial consequences to achieve those benefits.

The State of Iowa has made a substantial investment in the Network and, to fully achieve its potential diverse benefits throughout the state, a new organizational structure is needed and should be established during the 1994 Legislative session.

2. DEVELOP NETWORK FINANCIAL OPERATIONS PLAN

Current projections show that the Network will have accumulated a deficit of almost \$26 million through FY 99, even if the \$5 million annual appropriation is extended from FY 96, its current expiration, through FY 99. In FY 95 alone, with an authorized \$5 million appropriation and after making the scheduled principal and interest payments on the outstanding COPS, the deficit is projected to be over \$6.7 million. Obviously, the Network will not be able to provide the intended benefits to users if it is not financially able to continue operations.

During the 1994 Legislative session, the Governor and Legislature must determine if the State can continue to operate the Network as currently planned and, if so, what revenue sources can be devoted to meeting necessary expenses. Alternatively, if they determine that operating modifications are necessary, those modifications and the financial implications of the modifications should be jointly committed to. To help ensure success of the Network, reasonable stability in Network objectives and operations must be provided as its long-term financial viability is sought.

In addition, during the 1994 session, the Legislature must address the following:

- Determine whether Network usage fees may be used to help make annual debt payments.
- Require Network usage rates to be established through a formal rate-setting mechanism.
- Require all State agencies to utilize Network services, except where legal considerations preclude such usage.
- Determine the amount of any "educational subsidy" to be provided through the Network's educational video rate, as are other educational funding matters.
- Reconcile the \$330,000 shortfall between the IPTV budget request and Network revenue projections for FY 95.

3. DEVELOP PHASE III FINANCING AND CONSTRUCTION PLAN

As was demonstrated by Phases I and II, a project of the magnitude of the Network should not be undertaken without a comprehensive financing and construction plan which has been committed to by all major parties having significant ability to affect the success or failure of the undertaking. ***The lessons gained from Phases I and II can be valuable in achieving success for Phase III if those lessons are not forgotten.***

Hundreds of new endpoints are anticipated to be added to the Network through implementations of Phase III, effectively increasing the size of the Network by four to five times its current size. This will cause significant demand increases in the areas of scheduling, management, personnel, and equipment acquisition, usage and maintenance. These demands, both financial and organizational, can be effectively met when an adequate comprehensive plan has been prepared and committed to. This comprehensive plan should first include accomplishment of the organization structure and Phases I and II financial operations recommendations.

Supplemental Information

Iowa Communications Network

Appropriations History

	Effect on the ICN Appropriation	Net Appropriation Available
1989:		
House File 774 provided for the construction of the ICN and established a standing appropriation of \$10 million per year beginning FY90 through FY94.	\$ 50,000,000	50,000,000
House File 799 authorized use of \$600,000 of ICN funds as matching funds for a federal grant.	(600,000)	49,400,000
1990:		
Senate File 2280 eliminated the ICN appropriation for FY91, reduced the standing appropriation to \$5 million per year for FY90, FY92, FY93, and FY94, and extended the standing appropriation at \$5 million per year to FY95 and FY96.	(20,000,000)	29,400,000
Senate File 2280 authorized \$100,000 of ICN funds per year for FY91 and FY92 to be used for distance learning classroom demonstrations.	(100,000) *	29,300,000
Senate File 2423 authorized use of \$650,000 of ICN funds as matching funds for a federal grant for the community college in Waterloo.	(650,000)	28,650,000
1991:		
Senate File 532 deappropriated \$2,857,379 from the FY90 ICN funding.	(2,857,379)	25,792,621
Senate File 532 increased the amount authorized for distance learning classroom demonstration programs for FY91 and FY92 from \$100,000 to \$250,000 per year.	(150,000) *	25,642,621
1992:		
Appropriation transfer from the FY92 appropriation for Communications staffing at DGS.	(313,470)	25,329,151
Across-the-board cuts in state appropriations.	(200,377)	25,128,774
Senate File 2116 required reversion of the unspent FY92 appropriation to the State General Fund.	(2,000,000)	23,128,774

* - the acts authorized a total of \$500,000 to be used for distance learning classrooms, however, only \$250,000 was actually spent

Iowa Communications Network

Appropriations History

Net Appropriation for:

FY90	4,400,000
FY91	-
FY92	2,486,153
FY93	5,000,000
FY94	5,000,000
FY95	5,000,000
FY96	<u>5,000,000</u>
Subtotal	26,886,153

Deductions:

Demonstration Classrooms #1	(100,000)
Waterloo	(650,000)
Demonstration Classrooms #2	(150,000)
Appropriation Reduction	<u>(2,857,379)</u>

Net appropriation available for ICN \$ 23,128,774

Source: Management Team and Iowa Public Television

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	ICN Bid/Contract/Change Order Analysis	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
	Kiewit bid (11/21/90)	\$ 76,993,261		Educational Network
	Revised payment and bonding terms	(2,000,000)		
	Route Changes and Specific Defined End Points	(1,805,370)		
	Route Marker Reductions	(598,334)		
	Additional Miles due to Revised End Point Locations	<u>1,172,241</u>		
	Final Contract No. 2102 (4/15/91)	73,761,798		
6/28/91	Change order #1	5,552,420	KM KW KP	Add a second pair of fiber for future expansion of the network (\$3,954,380) and eliminate Bayley omniplexers and replace with M1-3 multiplexers and channel banks (\$1,598,040). (This provides an initial quantity of bandwidth availability for administrative traffic.)
6/16/92	Change order #2	(236,730)	KM KW KP	Credit for removal of 103 of 104 channel banks scheduled for installation at the Network Control Center at Camp Dodge and replace with a Tellabs 1/0 DACCS wired for 256 T-1 ports and equipped with 150 T-1 ports; the DACCS includes CPU redundancy (this allows ICN the option of manipulating DSOs, providing some conference and data bridging).
6/16/92	Change order #3	1,976,800	KM KW KP	To construct and install duplex DS3 from each of the eight IPTV transmitter towers to IPTV in Johnston...provides 1 duplex video codec at each transmitter site and 8 at IPTV control center. (All DS3's are hard wired through the regional centers to IPTV.)

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	Change Order	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
6/17/92	Change order #4	1,352,820	KM KW KP	Add one Alcatel RDX-31 DACS (SONET equipment) at each of the 15 regional centers and one at Camp Dodge. This provides for switching of DS3's and DS1's for new services (DS1 video teleconferencing) and routing of selected traffic on alternate routes due to failures in Part 1 segments. (The cost includes a credit for the removal of the M1-3 multiplexers at each center, per C.O. #1 -- and includes the optional APS redundant processor at Camp Dodge.)
8/17/92	Change order #5	-	SJ KW KP	Change the vendor providing the Network Management and Control System from DATAP to Applied Computing Devices (ACD) due to the increased demands of telecommunications and administrative traffic requirements. Change the vendor providing the cable from Siecor to Northern Telecom. (There is no increase in cost due to the change in vendors.)
8/17/92	Change order #6	(530,684)	KM KW KP	Replace the Alcatel RDX-33 DACS at the HUB and the Tellabs 542 DACS at the 15 regional centers with the Grass Valley DAX-3-1024 at the HUB and the Grass Valley DCC-45 at the regional centers. (This provides the State with the ability to support future migration to a SONET network and better support interactive video.)
8/17/92	Change order #7	182,895	SJ KW KP	Add a subtending packet switch network. The addition of administrative traffic to the network caused the Universal Gateway to the central processors to be at full capacity immediately. This packet switch network will reduce this capacity problem significantly and allow for economical and efficient growth in the network elements.
8/21/92	Change order #8	241,836	SJ KW KP	Additional work completed in June 1992 which was beyond the scope of the contract. Some of the items included: Coralville Reservoir bore, Highway 415 reroute, Camp Dodge and Iowa City multicell, etc.

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
9/28/92	3,302,648	KM KW KP TC	Add local/tandem switch to the network to handle the administrative traffic switching requirements.
9/28/92	646,789	KM KW KP TC	Add interactive video control services to the network (Grass Valley Master II System for the Classification #1-3 packages.) Classifications 1 and 2 (\$369,799) were included in Kiewit's Design Modifications dated March 12, 1992. Classification #3 features are IPTV-requested modifications and additions that required additional cost and lead time to develop (\$276,990).
9/28/92	4,915,493	KM KW KP TC	Add alternate routing to the network. This was necessary due to the addition of administrative traffic to the ICN and includes cost to close 8 loops and add the necessary lightwave transmission equipment.
10/6/92	747,846	KM KW KP PC	Cost to accelerate the construction schedule for completion of the ICN to reflect a completion date of October 15, 1993. Due to the delay in the start of construction in 1991, the completion date was June 13, 1994. The cost of acceleration includes the following: personnel and equipment (\$502,378), material storage (\$83,413), and reimbursement for the late payments to Kiewit (\$111,817).
10/29/92	(619,267)	KM KW KP TC	Acceptance of the ICN Value Engineering Change Proposal #1. (The VECP consisted of engineering/design changes, developed by Kiewit, which saved the State money.)
10/29/92	(262,647)	KM KW KP TC	Acceptance of the ICN Value Engineering Change Proposal #2.

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	Change Order	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
10/30/92	Change order #15	396,203	KM KW KP PC	Encompasses several miscellaneous contract construction changes. Some of the changes include: Urban multicell (balance), propane tank burial, electrical grounding at schools, etc.
10/30/92	Change order #16	1,521,564	KM KW KP PC	The addition of low speed protection for the transmission system on the ICN backbone. This adds another set of electrical DS3 cards to the OC-12 and OC-48 fiber optic terminals.
11/12/92	Change order #17	10,000	KM,SJ KW KP PC	Engineering design work for the movement of the ICN temporary HUB located at Camp Camp Dodge building W-34 to the permanent HUB under construction at the STARC Armory.
12/8/92	Change order #18	(453,419)	KM KW KP TC	Amends Change Order #11 for alternate routing, from \$4,915,493 to \$4,420,221, due to the finalizing of the design. Amends Change Order #16 for low speed protection, from \$1,521,564 to \$1,468,660, due to the redesign of the alternate routing. In addition, this change order provides low speed protection for the alternate routing electronics at an additional cost of \$94,757.
1/13/93	Change order #19	(9,290)	SJ KW KP AC (JG,PC)	Covers several misc. credits totaling \$66,222 (i.e. deletes generators \$54,645, reroute Sioux City \$4,454) and expenses of \$56,932 on the construction requirements of the ICN (i.e. increase backbone links for private colleges from 2 to 4 fibers \$20,507, restoral of Fremont County Road \$16,625, etc.).
1/25/93	Change order #20	52,275	SJ KW KP AC (JG,PC)	The addition to the network of intelligent channel bank control by the ACD Network Management System for the 103 channel banks which are presently part of the network configuration. This adds a control circuit to the intelligent channel bank so that, in the future, the control of these channel banks can be accomplished by the ACD Management System.

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	Change Order	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
1/26/93	Change order #21	(90,317)	SJ KW KP AC (JG,PC)	Signing of 8 agreements for "share-the-trench" projects.
1/26/93	Change order #22	71,362	SJ KW KP AC (JG,PC)	Revised route between Winterset and Indianola caused by a planned construction project by DOT on Highway 92. This revised route is over 4 miles longer than the original route design.
3/3/93	Change order #23	278	SJ KW KP AC (JG)	Miscellaneous construction changes.
3/3/93	Change order #24	402,812	SJ,KM KW KP AC (JG)	ACD enhancements to add licensing of a DSO Network Knowledge Base Model to allow for the addition of DSO circuit provisioning, assignment analysis and audit capabilities. Secondly, software and hardware for simple contact closure alarms of PABXs. Thirdly, addition of software to enhance to ACD NMS to support temporary or permanent reconfiguration of DS3 circuits based on a manually defined route plan.
3/3/93	Change order #25	100,000	SJ KW KP AC (JG)	Cost of remobilizing contractors at 50 sites.
5/4/93	Change order #26	26,729	SJ KW KP AC (JG,PC)	Authorization of several miscellaneous expenditures, some of which include: continued engineering design work for the move of the temporary HUB to the permanent location at the STARC Armory (\$10,000), addition of 3 VT 420 terminals and 3 printers to the Regents' institutions locations (\$6,000), etc.

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date		Amount (Rounded)	C.O. Signed By	Purpose/Remarks
5/10/93	Change order #27	290,435	SJ,KM KW KP AC (JG,PC)	Authorization for providing outside plant fiber optic facilities as well as transmission equipment and a video codec to serve the Iowa Medical and Classification Center in Oakdale, the Iowa Correctional Institute for Women at Mitchellville, and the Mount Pleasant Mental Health Institute. In addition, Kiewit and DGS agreed to complete this installation by 8/15/93 and that all funds for this project will pass away on 9/1/93.
6/10/93	Change order #28	384,609	SJ,KM KW KP AC (PC)	Adds dark fiber to six private colleges; includes cable and all necessary construction. The colleges included are: Wartburg, William Penn, Graceland, Buena Vista, Simpson, and Dordt.
6/15/93	Change order #29	107,635	SJ KW KP AC (JG,PC)	Authorization of alternate routing to the new community college site located at 600 North 2nd Avenue, West, in Newton. This new route is approximately 2.75 miles and is the one preferred by the City of Newton.
6/29/93	Change order #30	45,252	SJ JMC KP AC (JG,PC)	Covers the upgrade of the NTI FMT-150 transmission system ordered for the Mental Health Institute at Mount Pleasant (authorized by Change Order #27) to a NT OC-12 system (\$108,996 - \$63,744).
6/29/93	Change order #31	27,946	SJ JMC KP AC (JG,PC)	Covers several miscellaneous credits totaling \$950 and expenses of \$28,896 on the construction requirements of the network. The expenses include the connection of Oakdale Mental Health Facility to Link 1002 and an increase in the AT & T 3/3 DACS by 16 DS3 ports.
6/29/93	Change order #32	978,845	KM KW KP AC (JG,PC)	Authorization of the addition of dark fiber to 7 private colleges; includes cable and all necessary construction. The colleges included are: Morningside, Mount St. Clare, Waldorf, Upper Iowa, St. Ambrose, Northwestern, and Luther.

Iowa Communications Network
Construction Contract and Change Orders

Change Order Date	Change Order	Amount (Rounded)	C.O. Signed By	Purpose/Remarks
7/26/93	Change order #33	747,067	KM JMC KP AC (JG,PC)	Authorization for expenditures related to: relocation of the Network Hub (\$595,506), the transition of extensive live, revenue producing traffic and the operating educational video system (\$105,054); the increase from 2 to 4 fibers for private colleges (\$11,951); automated rerouting of DS1 circuits instead of DS3 circuits (\$52,505), etc. In addition, credit was given for: installation of a generator and tank at UNI (\$5,758) and two share-the-trench agreements (\$19,499).
9/2/93	Change order #34	567,671	KM KW KP AC (JG,PC)	Authorization for expenditures related to: adequately equipping the Control Center at the STARC Armory (\$10,565), extending the ICN from the Linn County POP to Mt. Mercy College (\$470,881), adding additional capacity to the Alcatel 3/1 DACS at the STARC Armory (\$69,336), furnishing a Northern Telecom DB45 Codec to the Lucas Building Hub (\$16,334), etc.
Total contract amount as amended through change order #34		<u>96,209,674</u>		

Change order signed by
 KM = Kevin Moersch, Kiewit President
 SJ = Stacy Jenkins, Kiewit Project Manager
 JMC = J. Michael Carlstrom, Director, Department of General Services (DGS)
 KW = Kathleen Williams, Administrator, Communications Division (DGS)
 KP = Kenneth Paulsen, Administrator, Purchasing Division (DGS)
 AC = Anthony Crandell, ICN Construction Manager (DGS)
 TC = Ted Chapler, ICN Chief Executive Officer (Iowa Finance Authority)
 PC = Paul Carlson, ICN Project Manager (Department of Management)
 JG = Jerry Gamble, Administrator, Administrative Services Division (DGS)
 () = indicates that they only initialed the change order

Source: Department of General Services

Iowa Communications Network

Iowa Communications Network

Balance Sheets

	June 30, 1990	June 30, 1991	June 30, 1992	June 30, 1993
Assets				
Cash and investments	\$ -	-	82,061,543	25,393,797
Cash-Norwest (In Transit)	-	-	-	690,341
Unexpended appropriation	4,265,794	75,070	-	-
Accounts receivable	-	625	15,000	53,818
Interest receivable	-	-	523,812	537
Due from other funds	-	-	2,739	405,740
Construction in progress	-	-	28,665,237	62,052,724
Equipment	-	-	-	6,657,870
Plant improvement	-	-	-	7,315
Lines in service	-	-	-	15,524,333
Prepaid expense	-	-	806,578	766,249
Deferred charges	-	-	2,439,529	2,265,277
Total assets	\$ 4,265,794	75,695	114,514,438	113,818,001
Liabilities				
Accounts payable and accruals	\$ 18,755	74,544	15,639,173	6,988,758
Due to other funds	5,575	-	71,797	6,388
Due to State General Fund	-	1,151	-	-
Deposits held in custody	-	-	-	424,703
Retainage payable	-	-	-	809,862
Interest payable	-	-	1,464,703	2,929,405
Other financing arrangements payable	-	-	94,939,892	95,017,757
Total liabilities	24,330	75,695	112,115,565	106,176,873
Fund Equity	4,241,464	-	2,398,873	7,641,128
Total liabilities and fund equity	\$ 4,265,794	75,695	114,514,438	113,818,001

Note: In FY90 and FY91, the ICN Fund was classified as a general fund type at Iowa Public Television. In FY92 and FY93, the ICN Fund was classified as an enterprise fund at Department of General Services.

Source: Iowa Public Television and Department of General Services

Iowa Communications Network

Operating Statements

	Fiscal Year Ended			
	June 30, 1990	June 30, 1991	June 30, 1992	June 30, 1993
Revenues:				
Appropriations	\$ 4,400,000	-	2,486,153	5,000,000
Charges for service	-	-	-	464,621
Federal revenue	-	-	-	500,000
Other	-	47,422	-	-
Total revenues	4,400,000	47,422	2,486,153	5,964,621
Expenses:				
Travel	557	-	10,832	1,479
Supplies	2,596	-	1,316	4,943
Contractual services	155,383	206,192	16,966	526,355
Interest expense	-	-	-	417,144
Administration expense	-	-	14,603	68,273
Amortization expense	-	-	43,563	174,252
Total expenses	158,536	206,192	87,280	1,192,446
Income before other sources (uses)	4,241,464	(158,770)	2,398,873	4,772,175
Other sources (uses):				
Transfers in	-	-	-	470,080
Transfers out	-	(324,164)	-	-
Appropriation reduction	-	(3,757,379)	-	-
Reversion	-	(1,151)	-	-
Total other sources (uses)	-	(4,082,694)	-	470,080
Net income (deficit)	4,241,464	(4,241,464)	2,398,873	5,242,255
Fund equity, July 1	-	4,241,464	-	2,398,873
Fund equity, June 30	\$ 4,241,464	-	2,398,873	7,641,128

Note: In FY90 and FY91, the ICN Fund was classified as a general fund type at Iowa Public Television. In FY92 and FY93, the ICN Fund was classified as an enterprise fund at Department of General Services.

Source: Iowa Public Television and Department of General Services

Iowa Communications Network
Maturity Schedule for Certificates of Participation
Series 1992A and 1993A

Prepayment Option Not Exercised			
Payment Date	Principal	Interest	Total
1992 - Jul 1	\$ -	1,464,702	1,464,702
1993 - Jan 1	-	2,929,405	2,929,405
- Jul 1	-	2,929,405	2,929,405
1994 - Jan 1	-	3,413,000	3,413,000
- Jul 1	-	3,375,800	3,375,800
1995 - Jan 1	-	3,375,800	3,375,800
- Jul 1	6,970,000	3,375,800	10,345,800
1996 - Jan 1	-	3,203,880	3,203,880
- Jul 1	7,315,000	3,203,880	10,518,880
1997 - Jan 1	-	3,015,713	3,015,713
- Jul 1	7,690,000	3,015,713	10,705,713
1998 - Jan 1	-	2,812,655	2,812,655
- Jul 1	8,095,000	2,812,655	10,907,655
1999 - Jan 1	-	2,588,699	2,588,699
- Jul 1	8,540,000	2,588,699	11,128,699
2000 - Jan 1	-	2,341,983	2,341,983
- Jul 1	9,040,000	2,341,983	11,381,983
2001 - Jan 1	-	2,079,264	2,079,264
- Jul 1	9,560,000	2,079,264	11,639,264
2002 - Jan 1	-	1,796,567	1,796,567
- Jul 1	10,125,000	1,796,567	11,921,567
2003 - Jan 1	-	1,489,881	1,489,881
- Jul 1	1,705,000	1,489,881	3,194,881
2004 - Jan 1	-	1,445,977	1,445,977
- Jul 1	1,790,000	1,445,977	3,235,977
2005 - Jan 1	-	1,398,990	1,398,990
- Jul 1	1,885,000	1,398,990	3,283,990
2006 - Jan 1	-	1,348,566	1,348,566
- Jul 1	41,815,000	1,348,566	43,163,566
Total	\$114,530,000	67,908,262	182,438,262

Source: Auditor of State calculation from certificates of participation.

Iowa Communications Network
Maturity Schedule for Certificates of Participation
Series 1992A and 1993A

Payment Date	Prepayment Option Exercised		
	Principal	Interest	Total
1992 - Jul 1	\$ -	1,464,702	1,464,702
1993 - Jan 1	-	2,929,405	2,929,405
- Jul 1	-	2,929,405	2,929,405
1994 - Jan 1	-	3,413,000	3,413,000
- Jul 1	-	3,375,800	3,375,800
1995 - Jan 1	-	3,375,800	3,375,800
- Jul 1	6,970,000	3,375,800	10,345,800
1996 - Jan 1	-	3,203,880	3,203,880
- Jul 1	7,315,000	3,203,880	10,518,880
1997 - Jan 1	-	3,015,713	3,015,713
- Jul 1	7,690,000	3,015,713	10,705,713
1998 - Jan 1	-	2,812,655	2,812,655
- Jul 1	8,095,000	2,812,655	10,907,655
1999 - Jan 1	-	2,588,699	2,588,699
- Jul 1	8,540,000	2,588,699	11,128,699
2000 - Jan 1	-	2,341,983	2,341,983
- Jul 1	9,040,000	2,341,983	11,381,983
2001 - Jan 1	-	2,079,264	2,079,264
- Jul 1	9,560,000	2,079,264	11,639,264
2002 - Jan 1	-	1,796,567	1,796,567
- Jul 1	10,125,000	1,796,567	11,921,567
2003 - Jan 1	-	1,489,881	1,489,881
- Jul 1	10,745,000	1,489,881	12,234,881
2004 - Jan 1	-	1,152,177	1,152,177
- Jul 1	11,415,000	1,152,177	12,567,177
2005 - Jan 1	-	792,377	792,377
- Jul 1	12,135,000	792,377	12,927,377
2006 - Jan 1	-	408,829	408,829
- Jul 1	12,900,000	408,829	13,308,829
Total	\$114,530,000	64,227,962	178,757,962

Source: Auditor of State calculation from certificates of participation.

Iowa Communications Network

COPS Inflows and Outflows

1992A Series

	Lease Payment Account	Capitalized Interest Account
Issue amount	\$ -	-
Issue discount	-	-
Insurance cost	-	-
Underwriting cost	-	-
Accrued interest received	-	-
Distribution of net COPS proceeds	471,960	10,646,322
Inflows:		
Interest income	2,559	79,979
Total	474,519	10,726,301
Outflows:		
Issue related fees:		
Legal fees	-	-
Financial advisor fees	-	-
Rating agency fees	-	-
Recording fees	-	-
Printing	-	-
Bank administrative charges	-	-
Construction payments	-	-
Total	-	-
Balance at June 30, 1992	474,519	10,726,301
Inflows:		
Interest income	30	420,330
State Communications Network Fund contribution	-	-
Transfer from capitalized interest and reserve accounts	3,919,572	-
Refunds	-	-
Total	3,919,602	420,330
Outflows:		
Issue related fees:		
Legal fees	-	-
Rating agency fees	-	-
Recording fees	-	-
Bank administrative charges	-	-
Construction payments	-	-
Transfers to lease payment account	-	(3,640,076)
Interest on COPS	(4,394,107)	-
Total	(4,394,107)	(3,640,076)
Balance at June 30, 1993	14	7,506,555

Reserve Account	Cost of Issue Account	Construction Account	Total
-	-	-	96,030,000
-	-	-	(1,109,574)
-	-	-	(1,200,000)
-	-	-	(1,010,006)
-	-	-	471,960
9,492,043	360,000	72,212,055	93,182,380
3,707	1,035	39,584	126,864
9,495,750	361,035	72,251,639	93,309,244
-	(138,589)	-	(138,589)
-	(87,541)	-	(87,541)
-	(25,000)	-	(25,000)
-	(95)	-	(95)
-	(34,720)	-	(34,720)
-	(14,603)	-	(14,603)
-	-	(11,320,026)	(11,320,026)
-	(300,548)	(11,320,026)	(11,620,574)
9,495,750	60,487	60,931,613	81,688,670
848,463	1,459	1,565,475	2,835,757
1,068,454	-	2,000,000	3,068,454
-	-	-	3,919,572
-	15,000	-	15,000
1,916,917	16,459	3,565,475	9,838,783
-	(27,434)	-	(27,434)
-	(24,000)	-	(24,000)
-	(5,079)	-	(5,079)
-	(13,902)	-	(13,902)
-	-	(60,385,508)	(60,385,508)
(279,496)	-	-	(3,919,572)
-	-	-	(4,394,107)
(279,496)	(70,415)	(60,385,508)	(68,769,602)
11,133,171	6,531	4,111,580	22,757,851

Iowa Communications Network

COPS Inflows and Outflows

1992A Series

	Lease Payment Account	Capitalized Interest Account
Balance July 1, 1993	14	7,506,555
Inflows:		
Interest income	-	-
State Communications Network Fund contribution	-	-
Transfer from capitalized interest and reserve accounts	2,929,392	-
Material sale to DOT	-	-
Total	<u>2,929,392</u>	-
Outflows:		
Issue related fees:		
Legal fees	-	-
Bank administrative charges	-	-
Construction payments	-	-
Transfers to lease payment account	-	(2,580,516)
Interest on COPS	(2,929,405)	-
Total	<u>(2,929,405)</u>	<u>(2,580,516)</u>
Balance at November 30, 1993	<u>\$ 1</u>	<u>4,926,039</u>

Source: July 1992 through November 1993 bank statements and settlement statement.

Reserve Account	Cost of Issue Account	Construction Account	Total
11,133,171	6,531	4,111,580	22,757,851
3,133	44	13,830	17,007
-	-	3,542,511	3,542,511
-	-	-	2,929,392
-	-	226,597	226,597
3,133	44	3,782,938	6,715,507
-	(28)	-	(28)
-	(6,547)	-	(6,547)
-	-	(1,022,661)	(1,022,661)
(348,876)	-	-	(2,929,392)
-	-	-	(2,929,405)
(348,876)	(6,575)	(1,022,661)	(6,888,033)
10,787,428	-	6,871,857	22,585,325

Iowa Communications Network

COPS Inflows and Outflows

1993A Series

	Lease Payment Account	Capitalized Interest Account
Issue amount	\$ -	-
Issue discount	-	-
Insurance cost	-	-
Underwriting cost	-	-
Accrued interest received	-	-
Distribution of net COPS proceeds	54,559	-
Inflows:		
State Communications Network Fund contribution	-	247,514
Interest income	50	4
Total	<u>54,609</u>	<u>247,518</u>
Outflows:		
Issue related fees:		
Legal fees	-	-
Financial advisor fees	-	-
Rating agency fees	-	-
Printing	-	-
Construction payments	-	-
Transfer to Public Defense	-	-
Total	<u>-</u>	<u>-</u>
Balance at November 30, 1993	<u>\$ 54,609</u>	<u>247,518</u>

(A) - The insurance costs of \$195,451 and the underwriting costs of \$204,240 were paid from the State Communications Network Fund.

Source: July 1993 through November 1993 bank statements and settlement statement.

Reserve Account	Cost of Issue Account	Construction Account	Total
-	-	-	18,500,000
-	-	-	(110,815)
-	-	-	(A)
-	-	-	(A)
-	-	-	54,559
1,838,919	-	16,550,266	18,443,744
-	150,000	-	397,514
44	937	71,855	72,890
1,838,963	150,937	16,622,121	18,914,148
-	(86,286)	-	(86,286)
-	(39,309)	-	(39,309)
-	(10,400)	-	(10,400)
-	(14,773)	-	(14,773)
-	-	(16,183,999)	(16,183,999)
-	-	(215,000)	(215,000)
-	(150,768)	(16,398,999)	(16,549,767)
1,838,963	169	223,122	2,364,381

Iowa Communications Network
 Summary of COPS Inflows and Outflows
 1992A & 1993A Series Combined

	Lease Payment Account	Capitalized Interest Account
Issue amount	\$ -	-
Issue discount	-	-
Insurance cost	-	-
Underwriting cost	-	-
Accrued interest received	-	-
Distribution of net COPS proceeds	526,519	10,646,322
Inflows:		
Interest income	2,639	500,313
State Communications Network Fund contribution	-	247,514
Transfer from capitalized interest and reserve accounts	6,848,964	-
Material sale to DOT	-	-
Refunds	-	-
Total	<u>7,378,122</u>	<u>11,394,149</u>
Outflows:		
Issue related fees:		
Legal fees	-	-
Financial advisor fees	-	-
Rating agency fees	-	-
Recording fees	-	-
Printing	-	-
Bank administrative charges	-	-
Construction payments	-	-
Transfer to Public Defense	-	-
Transfer to lease payment account	-	(6,220,592)
Interest on COPS	(7,323,512)	-
Total	<u>(7,323,512)</u>	<u>(6,220,592)</u>
Balance at November 30, 1993	<u>\$ 54,610</u>	<u>5,173,557</u>

* - Does not include payments made by the State Communications Network Fund of \$195,451 for insurance and \$204,240 for underwriting fees for the 1993 Series.

Source: July 1992 through November 1993 bank statements and settlement statement.

Reserve Account	Cost of Issue Account	Construction Account	Total
-	-	-	114,530,000
-	-	-	(1,220,389)
-	-	-	(1,200,000) *
-	-	-	(1,010,006) *
-	-	-	526,519
11,330,962	360,000	88,762,321	111,626,124
855,347	3,475	1,690,744	3,052,518
1,068,454	150,000	5,542,511	7,008,479
-	-	-	6,848,964
-	-	226,597	226,597
-	15,000	-	15,000
13,254,763	528,475	96,222,173	128,777,682
-	(252,337)	-	(252,337)
-	(126,850)	-	(126,850)
-	(59,400)	-	(59,400)
-	(5,174)	-	(5,174)
-	(49,493)	-	(49,493)
-	(35,052)	-	(35,052)
-	-	(88,912,194)	(88,912,194)
-	-	(215,000)	(215,000)
(628,372)	-	-	(6,848,964)
-	-	-	(7,323,512)
(628,372)	(528,306)	(89,127,194)	(103,827,976)
12,626,391	169	7,094,979	24,949,706

Iowa Communications Network

State Appropriations Activity

	FY90	FY91	FY92	FY93
	Appropriation	Appropriation	Appropriation	Appropriation
Original appropriation	\$ 10,000,000	-	5,000,000	5,000,000
Appropriation reduction	(5,000,000)	-	(2,200,377)	-
Earmarked for Southwestern CC	(600,000)	-	-	-
Appropriation transfer to DGS	-	-	(313,470)	-
Net appropriation received	4,400,000	-	2,486,153	5,000,000
Uses:				
Payment to STARC Armory	-	-	(710,766)	-
Payment for temporary HUB	-	-	(145,687)	-
Payment for construction	-	-	(1,600,177)	-
Payment to Hawkeye Institute of Technology	(650,000)	-	-	-
Payment for classroom demonstrations	(250,000)	-	-	-
Transfer to Norwest: 1992 Reserve Fund	-	-	-	(1,068,454)
Transfer to Norwest: Construction Fund	-	-	-	(2,690,341)
Transfer to pay 1993 Bond Financing Costs	-	-	-	(797,205)
Transfer for communications staffing	(324,164)	-	-	(324,000)
Amount used for ICN operations	(317,306)	-	(29,523)	(120,000)
Appropriation reduction	(2,857,379)	-	-	-
Reversion	(1,151)	-	-	-
Total uses	(4,400,000)	-	(2,486,153)	(5,000,000)
Net	\$ -	-	-	-

Source: Legislative acts, Fullerton and Friar financial calculations report dated July 1, 1993

Appendix

Iowa Communications Network

The logo for Kiewit Network Technologies is displayed within a dark, horizontal rectangular banner. The text "Kiewit Network Technologies" is written in a white, sans-serif font. To the left of the text is a small icon consisting of three horizontal bars of varying lengths, resembling a stylized 'E' or a network symbol.

14 March, 1992

Department of General Services
Communications Division
Hoover State Office Bldg., Level A
Des Moines, IA 50319-0102

Attn: Tony Crandell

Subject: ICN site and room selection issues

Dear Tony:

As you know, the issue of site visits, room selection, cable routing and generator/fuel tank placement has become a critical factor in the overall progress of the ICN project.

Progress in this effort has been very slow and at times' non existent. This task, although an important one, should be relatively simple and straight forward. This task has in fact, become a very major effort that very likely will cause delays in the systems implementation. There are a number of contributing causes to the problem we are having:

- * KNT has never been given a list of the contact names for the site locations.
- * KNT is not permitted to contact the institutions independently.
- * IPTV makes the first site visits on their own and explains the project and then schedules a visit when KNT is to accompany them.
- * KNT has very little or no input on the scheduling of these visits or the priority of them.
- * Second visits to the sites for measurements or changes usually require IPTV to schedule it and accompany KNT.

When a site has selected its equipment room, generator, and fuel tank location, KNT prepares a footprint of the room to show approximate equipment locations and a general layout of the room. Rather than take this to the site contact, explaining it and getting their approval, we are required to go through a very lengthy process of approval that to date has yielded no results:

- * Deliver the cable route and room footprint drawings to IPTV who will in turn proof them and approve of them.
- * IPTV will deliver this information to the school.
- * The school will consider our design and approve it and then deliver the package back to IPTV.
- * IPTV will then deliver the approved drawings back to KNT.

KNT has no knowledge of just what time frames each of these steps is to take. Each of the drawings has been returned to KNT numerous times for small corrections or changes. It appears that we are to prepare architectural quality drawings on a simple room re-arrangement. We are not equipped to do this type of work and it is not necessary. To date, with the exception of IPTV itself, we have not gotten any of the BICS packages through the process to final approval.

We have tried to urge IPTV to streamline or simplify the process but have had very little success. We had suggested the following plan be implemented:

- * Send a letter to each school that will outline the requirements needed and show a tentative schedule for the site visits. This same letter will allow the schools or educational institute to get a feel of the project's time frame and just where they fit into it. In addition, it would explain that they would be contacted prior to the visit and an appointment made for the actual visit. This instructional letter was made out, and along with a schedule, given to IPTV for this purpose. It has not been used, however.
- * Supply KNT with a list of contacts for each school or educational institute so that we may implement item (a) above.
- * Allow KNT to schedule and make the initial and all subsequent visits to each location. This will allow us to better expend our time and effort and to assure that we are able to meet the State's requirements for system turn up and priorities.
- * Allow KNT to work with the individual locations and also to get the approvals needed and monitor the site and room ready dates. Without this we have no control over the overall progress of the project in so far as "traffic ready" dates. KNT will make every effort to meet the State's requirements as to location priority and system availability. We cannot, however, do this without some control in location ready dates.

We have found during our visits to these sites, that the people involved want assistance from the builder of the system on such things as power, environmental, scheduling, etc. They have shown a readiness to cooperate and only need on site help and decision making rather than scheduling, re-scheduling and confusion.

Kiewit Network Technologies takes a lot of pride in building this system. We also take a lot of pride, as a company, in the quality and expertise of our people. I am confident that we can handle this task in a tactful and intelligent manner and get it accomplished without many of these delays.

I am hoping that the Department of General Services can help us in improving this situation that has become very, very frustrating and time consuming.

Please contact me if you have any questions or if I can supply any additional information.

Respectfully,

Bob McWithey
J 24 SVJ

Bob McWithey
Engineering Manager
Kiewit Network Technologies

cc: Stacy Jenkins
Dan Neppl
File



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF GENERAL SERVICES
GERALD R. ANDERSON, DIRECTOR

September 25, 1991

James Pack
Kiewit Network Technologies
1100 Kiewit Plaza
Omaha, Nebraska 68131

Dear Jim:

The Department of General Services has finalized arrangements with the Department of Transportation. Please find enclosed the first set of permits we have been issued for construction.

The contract, #2102, General Services has signed with Kiewit states in section 2.18 that we must provide proof of funds sufficient to pay for any segment link upon request. We have approximately \$1.7 million dollars available to pay for construction at this time. The Department, in cooperation with the State Treasurer's Office, is working with the Iowa Communications Network Financial Team to prepare for the issuance of Certificates of Participation. At the present time we anticipate that funds to pay for construction should be available prior to the end of November.

We understand that as a result of this letter you will begin mobilizing and starting construction as per the the DOT Permits issued. As this letter indicates the State does not have the financing completed at this time. Knowing this to be the case, if KNT wishes to proceed with construction, you will have our cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Kathleen Williams".

Kathleen Williams, Administrator
Division of Communications

cc: Stacy Jenkins



Kevin P. Moersch
President

1100 Kiewit Plaza
Omaha, NE 68131
Tel. 402/271-2916
FAX 402-271-2889

File No. DG11-6G

November 6, 1991

Gerald Anderson
Dave Roederer
Gretchen Tegler
Kathleen Williams
STATE OF IOWA
Des Moines, Iowa 50300

After reviewing our in-house and external legal assessments, we have developed the following incurred, reimbursable cost and settlement estimate, consistent with the terms of our contract with the State of Iowa, should the State elect to default/terminate the contract.

<u>Description</u>	<u>Total Value</u>	<u>Estimated Percentage Impact</u>	<u>State Cost Impact</u>
Current Cost (11/3/91)	\$6,095,029	100%	\$6,095,029
Accruals (Add-on, etc.)	450,000	100%	450,000
Materials Contracts	18,073,504	50%	9,036,752
Civil Subcontracts	3,420,767	75%	2,565,575
Equipment Depreciation	116,000	100%	116,000
Demobilization Expenses	509,300	100%	509,300
Consulting Fees	60,000	100%	60,000
Proposal/Engr/Route Surveys	600,000	100%	600,000
Corporate/Division G&A		Prorated,	2,914,950
COST TO STATE			<u>\$22,347,950</u>

This summary does not include any contract or other legal damage(s) liability that Kiewit Network Technologies, Inc. (KNT's) and/or the State may incur, but is based solely on our objective assessment of reasonable and typical termination fees of these type agreements. Although applicable, no allocation of KNT's profit has been included.

Please call so that we can discuss our course of action and options in this matter.

Sincerely,



Kevin P. Moersch
President

A Kiewit Company

Iowa Communications Network



Department of Justice

BONNIE J. CAMPBELL
ATTORNEY GENERAL

ADDRESS REPLY TO:
HOOVER BUILDING
DES MOINES, IOWA 50319
TELEPHONE: 515-281-5164
FACSIMILE: 515-281-4209

May 4, 1993

Ted Chapler
Iowa Finance Authority
L O C A L

Re: ICN Change Orders

Dear Ted:

I have received Bob Helmick's faxed memorandum of April 29th regarding the change orders for the ICN and specifically whether Iowa Code § 18.136(6) required Legislative Council and Department of Management certification of the availability of funds before the change orders were approved. The memo discusses the change orders in the context of the RFP and the contract for the project. Both the RFP and the contract contain language wherein the State clearly reserves the right to negotiate changes in the contract by issuing change orders. It is my understanding that all of the change orders issued have been appropriately approved by the Department of General Services, the agency having primary responsibility for the contract.

My understanding is that there have been approximately \$10.7 million in change orders to the network contract. These costs are attributable to adding alternate routing at a cost of approximately \$4.5 million, a local tandem switch at an additional cost of \$2.5 million, a distance learning switch for approximately \$650,000, and additional equipment and protection to allow the network to handle administrative traffic and data for approximately \$3 million. All of these changes are discussed at pages 7 through 10 of your report to the Legislative Fiscal Committee of November 13, 1992.

Iowa Code section 18.136(6) provides as follows:

Prior to the awarding of a contract under this section, the department shall notify the legislative council and the department of management of the department's intent to award a contract and of the cost to the

Ted Chapler
May 4, 1993
Page 2

state. The department of management and the legislative council shall determine if the anticipated financial resources of the state are adequate to fund the expenditure during the fiscal years covered by the contract, and if so, the department of management shall certify the determination to the department. Upon certification, the department may enter into the contract.

The additional cost of the enhancements to the system are within the terms of the RFP and the contract itself as the contract and the RFP both allow for the State to change or modify the contract. In our experience in representing State agencies, it is not unusual that change order language exists in major construction contracts and that change orders would be expected during the course of any major construction project. The key question here is whether the Department of General Services was required to contact the Legislative Council and the Department of Management "prior to the awarding of a contract" for any of the change orders that have been entered into.

Most of the case law that we have been able to find is not directly on point. There is considerable case law dealing with the right of contractors to receive payment for additional work or changes in a construction project. However, the primary issue is not the right of Kiewit to receive payment, as that has been agreed to by the State, but whether or not any approval is necessary from the Legislative Council. This is similar to the question of whether the appropriate public bidding process has been followed in the award of any of the change orders to Kiewit.

Albert Elia Building Company v. New York State Urban Development Corporation, 388 N.Y.S.2d 462, 54 A.2d 237 (N.Y. 1976); and Thompson-Abbott Construction Company v. City of Wausau, 100 N.W.2d 921 (Wis. 1960), both provide guidance on this question. In Albert Elia, the city of Niagara Falls entered into a lease agreement with the New York State Urban Development Corporation (UDC) whereby the UDC was to construct a convention center in downtown Niagara Falls on behalf of the city. The convention center was to consist of approximately two acres of buildings located along the eastern side of Fourth Street. The UDC awarded a contract in the amount of \$16,864,000 in March of 1971. In the fall of 1972, the city commenced plans for the development of the area to the west of Fourth Street into a plaza. Initially, the city and the UDC intended to build a covered overpass to connect the convention center with the new plaza but at the last minute changed the plans and in the summer of 1973 approved plans for the construction of a tunnel between

Ted Chapler
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the convention center and the new plaza. Rather than go through the formal bidding process for the tunnel project, the council directed the UDC to approve a change order to the general contractor for the convention center in the amount of \$400,000 for the excavation of the tunnel, the excavation of an escalator pit and additional items to link up the tunnel with the convention center.

Another contractor brought an action against the city and the UDC challenging the change order under the competitive bidding statutes. The New York Supreme Court, appellate division, determined that the change order for the tunnel was in violation of the state competitive bidding statute, stating:

Change orders may be issued without competitive bidding as to details and minor particulars. However, no important general change may be made which so varies from the original plan or is of such importance as to constitute a new undertaking. (Citations omitted.) Thus, UDC could modify their change in work required under the general construction contract so long as such modification did not "alter the essential identity or the main purpose of the contract." 388 N.Y.S.2d 462 at 467.

The court went on to state:

The test to be applied is whether the supplemental work ordered so varied from the original plan, was of such importance, or so altered the essential identity or main purpose of the contract, that it constitutes a new undertaking. 388 N.Y.S.2d 462 at 467.

The court found that the tunnel project was not a substitute or a change in the convention center contract but was an additional project supplemental to the decision to construct the plaza project, not the convention center.

In Thompson-Abbott, the Wisconsin Supreme Court held that "changes made after the letting of a public contract, which alter the manner of construction but do not substantially change the character of the building or unreasonably increase its costs, and are made pursuant to a provision in the contract permitting such changes, legally may be made without pursuing the statutory steps required to be taken before the letting of the original contract." 100 N.W.2d 921, 925.

Ted Chapler
May 4, 1993
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With these cases in mind, we turn now to the present situation concerning Iowa Code section 18.136(6). As Mr. Helmick points out, the RFP for the ICN and the contract with Kiewit both contain language anticipating changes and modifications in the contract. All of the change orders have been approved by the appropriate agency of state government. We assume that the Legislative Council was at least in a general way aware of the RFP at the time of the Legislative Council approval. Thus, it appears that change orders were contemplated. Your question remaining is whether any of the change orders involved were of such a nature that they varied from the original plan or altered the essential identity or main purpose of the contract such that it constituted a new undertaking.

By application of the standard enunciated in Albert Elia and Thompson-Abbott Construction Company, a credible argument can be made that all of the change orders involved fit within the scope of the original contract. None appear to change the identity of the project or add a different purpose to the original contract. All the change orders are for items that are supplemental to the original contract, do not change the character of the network or unreasonably increase the cost.

While the determination of the reasonableness of the various change orders is essentially a factual matter rather than a legal one, we believe a court is likely to defer to those with the responsibility for administering the contract. Therefore, if you are satisfied that the change orders thus far all fit within the legal standard enunciated above, there does not appear to be any legal requirement for submission of the previously approved change orders to the Legislative Council or Department of Management under Iowa Code section 18.136(6) (1993).

Sincerely,



Charles J. Krogmeier
Executive Deputy Attorney General

/jam

Enclosures

cc: Bob Helmick
Grant Dugdale



Department of Justice

BONNIE J CAMPBELL
ATTORNEY GENERALADDRESS REPLY TO
HOOVER BUILDING
DES MOINES IOWA 50319
TELEPHONE 515-281-5164
FACSIMILE 515-281-4209

May 26, 1993

Ted Chapler
Iowa Finance Authority
L O C A L

Re: ICN Change Orders

Dear Ted:

You have asked that I elaborate on my letter to Ted Chapler of May 4, 1993, in which I discuss the change orders to the ICN and specifically whether Iowa Code section 18.136(6) required legislative council approval before the change orders were approved and adopted by the Department of General Services. You have asked that I review the change orders for the ICN and further comment with regard to whether there remains any issue that needs to be taken to the legislative council.

In my earlier letter of May 4th I referred to approximately \$10.7 million in change orders for the network. Upon reviewing the specific contract and change orders themselves, it appears that I understated the amount of the change orders. The initial contract between the Department of General Services and Kiewit Network Technologies, Inc., was signed on April 15, 1991, in the amount of \$73,761,798. Since that time, 27 separate change orders have been executed affecting 94 different items within the contract. These change orders have added approximately \$21,750,303 to the original contract price.

As I explained in my letter of May 4, it is our conclusion that a change order would have to go the legislative council in the event that it changed the nature of the original plan such that it in reality created a new contract. In reviewing all of the change orders, the RFP, the contract, the Ernst and Young consultants' report to the legislative council in 1991 and the minutes of the legislative council meetings at that time, it is our conclusion that none of the change orders resulted in a change in the purpose of the project. All of the change orders are for items that are supplemental to and within the scope of the original contract. Legislative council approval pursuant to

Ted Chapler
May 26, 1993
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Iowa Code section 18.136(6) is not necessary for any of the 27 change orders that have been reviewed.

In reviewing the change orders, it appears that some actually resulted in reductions in cost to the state. Numerous others were due to changes discovered during construction or other types of field changes. Another group were items that were identified as optional features that were bid as part of the Kiewit contract. See Exhibit III. For example, adding two additional fibers to parts I and II was quoted as an additional item in the original contract in the amount of \$3,954,380. The State ultimately elected to add that feature to the project for that amount.

Several change orders had an impact on the cost of the network as a result of the decision to immediately add the State's administrative voice and data traffic to the network. Change orders 4, 7, 9, 11 and 18, in the aggregate, added \$9,300,437 to the initial contract. These items appear to be directly related to the technical ability to handle the State's administrative voice and data traffic on the network.

In the RFP, the ability to handle administrative voice and data traffic is mentioned several times. See, RFP, sections 3.3.10-2(1) and (8); 3.2 (last paragraph); 3.3.10-1. Also, in the definitions portion of the RFP, at Appendix 3A, the network is defined as

The network for the purposes of this RFP includes the Hub (Camp Dodge, Iowa), interconnection of the Hub with all Part 1 End Points (Regional Switching Centers, Regents Institutions and other Part 1 end points) and Part 2 End Points (Secondary Switching Centers) throughout the State by digital links for the two-way transmission of 45 megabit video, voice and data for State, education and administrative purposes as defined in Section 18.136(9) Code of Iowa (1989 supp.)

During the bidding process, there were certain questions posed by potential vendors and answers submitted by the State. These were all attached to the RFP and made available to all bidders. On the October 24, 1990, response to questions of vendors, questions 5, 13, and 15 all relate to the ability of the proposed network to handle the voice and data traffic of the state and all indicate that the State intended to add that traffic to the system. Also, in the November 6, 1990, answers to

Ted Chapler
May 26, 1993
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vendors' questions, item 2 was directly related to the State's requirements for administrative voice and data traffic.

At the time that the legislative council was giving its approval to the original contract in the spring of 1991, the council engaged the services of Ernst and Young as a consultant. Ernst and Young was asked to determine what, if any, additional costs were expected that were not included in the original bid. Section 5 of the Ernst and Young report discusses proposed additional costs to the State and to the users of the network. At least three times, the report mentions additional costs for the State to add its voice and data communications traffic to the network. The estimated cost for extra equipment was given as \$5 million. See Ernst and Young, page 5-3. Additionally, the original contract with Kiewit, in the Scope of Work section, includes references to the State's administrative voice on data traffic. Exhibit II to the contract provides as follows:

Vendor has re-designed an efficient, cost effective network capable of meeting the State's needs for an educational video network as well as provide the basis for adding data and telecommunications traffic to the network as desired

Additional significant costs in change order no. 3 added \$1,976,800 to the project for the addition of all of the IPTV transmitters to the network. Some but not all of the IPTV transmitters were in the original contract with indications that additional sites would be added in the future. The Ernst and Young report makes reference to this and indicates that adding the rest of the IPTV transmitters at an earlier date would generate revenues to the network. The addition of this change order to the contract appears to be within the scope of the original contract.

Significant costs in the amount of \$747,846 were added in change order no. 12 due to delays incurred by the State. All of these costs were related to the State not being ready to commence work as early as the contract had originally called for. Delay costs and penalties were part of the original contract and thus this change order too is within the scope of the original contract. See, Contract section 2.17(J).

Clearly, change orders were contemplated by the RFP and by the contract. Clearly, the legislative council had the RFP and contract, along with the Ernst and Young report, available to it at the time the initial Kiewit contract was approved by the legislative council. Change orders are typical for these kinds of projects and it would be expected that several would be

Ted Chapler
May 26, 1993
Page 4

entered into between the State and Kiewit. None of the change orders appear to have essentially changed the nature of the project or unreasonably increased its cost. We conclude that there is no legal requirement that the Department of General Services seek any further legislative council approval with regard to the change orders that we have reviewed thus far.

Sincerely,



Charles J. Krogmeier
Executive Deputy Attorney General

/jam

cc: Bob Helmick
Paul Carlson
Grant Dugdale

Iowa Communications Network

Letters of Intent

Letter of Intent Date	Purposes/Description	Amount (not to exceed)	Letter of Intent Signed By	Subsequent Change Order (C.O.) Number
6/4/92	Authorization to perform the necessary ground wiring at all sites requiring it.	\$ -	Anthony Crandell	Part of C.O. #15 - \$45,045 (10/30/92)
6/23/92	Increase the fiber count of a 40,000 foot section of cable located on Link 1013 from 4 to 8 fiber at a cost not to exceed \$6,859.	6,859.00	Anthony Crandell	Part of C.O.'s #8-\$6,173 (8/21/92) and #19 - <\$6,173> (1/13/93) (decrease due to alt. routing)
7/10/92	Relocate the fiber entry into Kirkwood College necessitated by the construction of a new parking lot: Job A	6,163.50	Anthony Crandell	Part of C.O. #15-\$20,227 (10/30/92)
	Job B	14,063.58		
8/7/92	Purchase the sub-tending packet switch network as proposed in KNT's letter of June 26, 1992.	182,894.90	Anthony Crandell	C.O. #7-\$182,895 (8/17/92)
8/7/92	Changes to the Fort Dodge Part 1 endpoint location to bring the primarily electrical service into compliance with current design. (The State will pay 50% of the cost of the change.)	2,500.00	Anthony Crandell	Part of C.O. #15-\$1,816 (10/30/92)
9/11/92	Local tandem switch as per the specifications approved by the State.	3,302,648.00		C.O. #9-\$3,302,648 (9/28/92)
	Grass Valley Master II System as per the specifications agreed to previously.	646,789.00	Kathy Williams	C.O. #10-\$646,789 (9/28/92)
	Alternate routing.	4,557,606.00		C.O. #11-\$4,915,493 (9/28/92) and C.O. #18-<\$495,272> (12/8/92)
Total		<u>\$ 8,719,523.98</u>		

Source: Kiewit Network Technologies, Inc. and Department of General Services.



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF GENERAL SERVICES
GERALD R. ANDERSON, DIRECTOR

Mr. Stacy Jenkins
ICN Project Director
Kiewit Network Technologies
Fairgrounds Access Road
Adel Iowa 50003

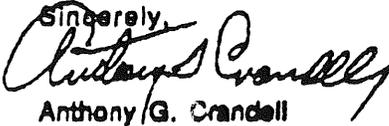
August 7, 1992

Subject: Letter of Intent - Change Order - Sub-tending Packet Switch Network.

Dear Stacy:

This is to formally notify you it is the State's intent to issue a change order to KNT to purchase the Sub-tending packet switch network as proposed in your letter of June 26, 1992. This letter of intent is valid up to the amount of \$182,894.90.

This letter will authorize you to proceed with that activity until such time you receive a formal change order.

Sincerely,

Anthony G. Crandell
ICN Project Manager

cc: Kathy Williams
Paul Jacobson



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF GENERAL SERVICES
GERALD R. ANDERSON, DIRECTOR

September 11, 1992

Stacy Jenkins
Kiewit Network Technologies, Inc.
2776 Fairground Access Road
Adel, Iowa 50003

Dear Stacy:

The Department of General Services has reviewed the proposals from Kiewit regarding the local/tandem switch, the Grass Valley Master II System and the alternate routing for loop closures for the Iowa Communications Network (ICN).

I hereby issue you this letter of intent for these items as follows:

- local/tandem switch as per the specifications approved by the State and in the amount of \$3,302,648
- Grass Valley Master II System as per the specifications agreed to previously and in the amount of \$646,789
- alternate routing not to exceed the proposed amount of \$4,557,606 and continue to investigate a good and economical alternate routing plan for the ICN

Please proceed with the ordering of the switch and the Master II System and we will continue to negotiate the accepted alternate routing plan with you.

If you have any questions regarding these items please let me know.

Sincerely,

Kathleen Williams
Administrator, Communications Division

cc: Gerald R. Anderson
Ted Chapler
Paul Carlson
Robert Helmick

Iowa Communications Network

Iowa Communications Network Summary

	ACTUAL FY 1992	ACTUAL FY 1993	ESTIMATED FY 1994	ESTIMATED FY 1995	ESTIMATED FY 1996	ESTIMATED FY 1997	ESTIMATED FY 1998	ESTIMATED FY 1999
Revenue								
Operating Revenue								
Voice Traffic			\$ 2,878,157	\$ 6,214,384	\$ 6,814,464	\$ 6,814,464	\$ 6,814,464	\$ 6,814,464
Video Traffic			155,895	721,260	1,442,520	2,885,040	2,885,040	2,885,040
Data Traffic		475,209	1,681,412	1,993,876	1,970,876	1,998,876	1,993,876	1,993,876
Transfer		497,996						
Total Operating Revenue		\$ 973,205	\$ 4,715,464	\$ 8,929,520	\$ 10,227,860	\$ 11,698,380	\$ 11,693,380	\$ 11,693,380
Other Revenue (Appropriation and Interest)	29,522	120,000	1,941,125	5,976,974	5,976,974	5,976,974	5,976,974	5,976,974
Total Revenue	\$ 29,522	\$ 1,093,205	\$ 6,656,589	\$ 14,906,494	\$ 16,204,834	\$ 17,675,354	\$ 17,670,354	\$ 17,670,354
Expenses								
Operating Costs								
Maintenance/ Operating Contract		\$ 293,652	\$ 990,000	\$ 2,444,000	\$ 2,687,591	\$ 2,768,219	\$ 2,851,266	\$ 2,936,804
Dept. of General Services Comm. Staff				333,720	343,732	354,044	364,665	375,605
Local Access Costs		14,814	1,099,358	1,024,508	974,858	981,656	988,658	995,870
Feature Group D Cost			1,142,110	1,084,219	1,116,746	1,150,248	1,184,756	1,220,299
Other Operating Costs	29,522	371,646	2,828,195	2,106,427	2,155,103	1,775,460	1,788,722	1,821,021
Total Operating Costs	\$ 29,522	\$ 680,112	\$ 6,059,663	\$ 6,992,874	\$ 7,278,030	\$ 7,029,627	\$ 7,178,067	\$ 7,349,599
Capital Costs								
			595,193	13,953,081	14,237,760	14,251,875	14,266,674	14,280,152
Total Operating Expenses and Capital Costs	\$ 29,522	\$ 680,112	\$ 6,654,856	\$ 20,945,955	\$ 21,515,790	\$ 21,281,502	\$ 21,444,741	\$ 21,629,751
Additional future cost for current network								
Annual Cost for General Services Management of the Network				\$ 725,000	\$ 725,000	\$ 725,000	\$ 725,000	\$ 725,000
Annual Cost for IPTV Management of the Network				?	?	?	?	?
Total Additional future cost for current network	\$ 0	\$ 0	\$ 0	\$ 725,000	\$ 725,000	\$ 725,000	\$ 725,000	\$ 725,000
Total Expenses	\$ 29,522	\$ 680,112	\$ 6,654,856	\$ 21,670,955	\$ 22,240,790	\$ 22,006,502	\$ 22,169,741	\$ 22,354,751
Surplus / Deficit	\$ 0	\$ 413,093	\$ 1,733	\$ 6,764,461	\$ 6,035,956	\$ 4,331,148	\$ 4,499,387	\$ 4,684,397
Cumulative Surplus/ Deficit		\$ 413,093	\$ 414,826	\$ 6,349,635	\$ 12,385,591	\$ 16,716,739	\$ 21,216,126	\$ 25,900,523

Iowa Communications Network

Iowa Communications Network

Weekly Cable Placement

Construction Season	Week Ending	Miles of Cable Placed	Cumulative Mileage
1991	10/20/91	12	12
1991	10/27/91	70	82
1991	11/3/91	16	98
1991	11/10/91	18	116
1991	11/17/91	51	167
1991	11/24/91	25	192
1991	12/1/91	-	192
1991	12/8/91	11	203
1991	12/15/91	12	215
1991	12/22/91	12	227
1991	12/29/91	-	227
1991	1/5/92	-	227
1991	1/12/92	6	233
1991	1/19/92	2	235
1991	1/24/92	2	237
1991	2/1/92	<u>2</u>	239
1991 Construction season		<u>239</u>	
1992	3/7/92	6	245
1992	3/14/92	4	249
1992	3/21/92	6	255
1992	3/28/92	21	276
1992	4/4/92	21	297
1992	4/11/92	32	329
1992	4/18/92	12	341
1992	4/25/92	7	348
1992	5/2/92	13	361
1992	5/9/92	53	414
1992	5/16/92	71	485
1992	5/23/92	89	574
1992	5/30/92	38	612
1992	6/6/92	83	695
1992	6/13/92	83	778
1992	6/20/92	83	861
1992	6/27/92	74	935
1992	7/4/92	82	1,017
1992	7/11/92	43	1,060
1992	7/18/92	52	1,112
1992	7/25/92	70	1,182
1992	8/1/92	48	1,230
1992	8/8/92	72	1,302

Iowa Communications Network

Weekly Cable Placement

Construction Season	Week Ending	Miles of Cable Placed	Cumulative Mileage
1992	8/15/92	72	1,374
1992	8/22/92	61	1,435
1992	8/29/92	42	1,477
1992	9/5/92	51	1,528
1992	9/12/92	31	1,559
1992	9/17/92	48	1,607
1992	9/26/92	61	1,668
1992	10/3/92	55	1,723
1992	10/10/92	60	1,783
1992	10/17/92	61	1,844
1992	10/24/92	65	1,909
1992	10/31/92	50	1,959
1992	11/7/92	42	2,001
1992	11/14/92	43	2,044
1992	11/21/92	33	2,077
1992	11/28/92	22	2,099
1992	12/5/92	-	2,099
1992	12/12/92	10	2,109
1992	12/19/92	7	2,116
1992	12/26/92	2	2,118
1992	1/9/93	<u>1</u>	2,119
1992 Construction season		<u>1,880</u>	
1993	4/24/93	4	2,123
1993	5/1/93	12	2,135
1993	5/8/93	20	2,155
1993	5/15/93	28	2,183
1993	5/22/93	89	2,272
1993	5/29/93	106	2,378
1993	6/5/93	42	2,420
1993	6/12/93	47	2,467
1993	6/19/93	117	2,584
1993	6/26/93	67	2,651
1993	7/3/93	55	2,706
1993	7/10/93	55	2,761
1993	7/17/93	38	2,799
1993	7/24/93	38	2,837
1993	7/31/93	29	2,866
1993	8/7/93	2	2,868
1993	8/14/93	2	2,870

Iowa Communications Network

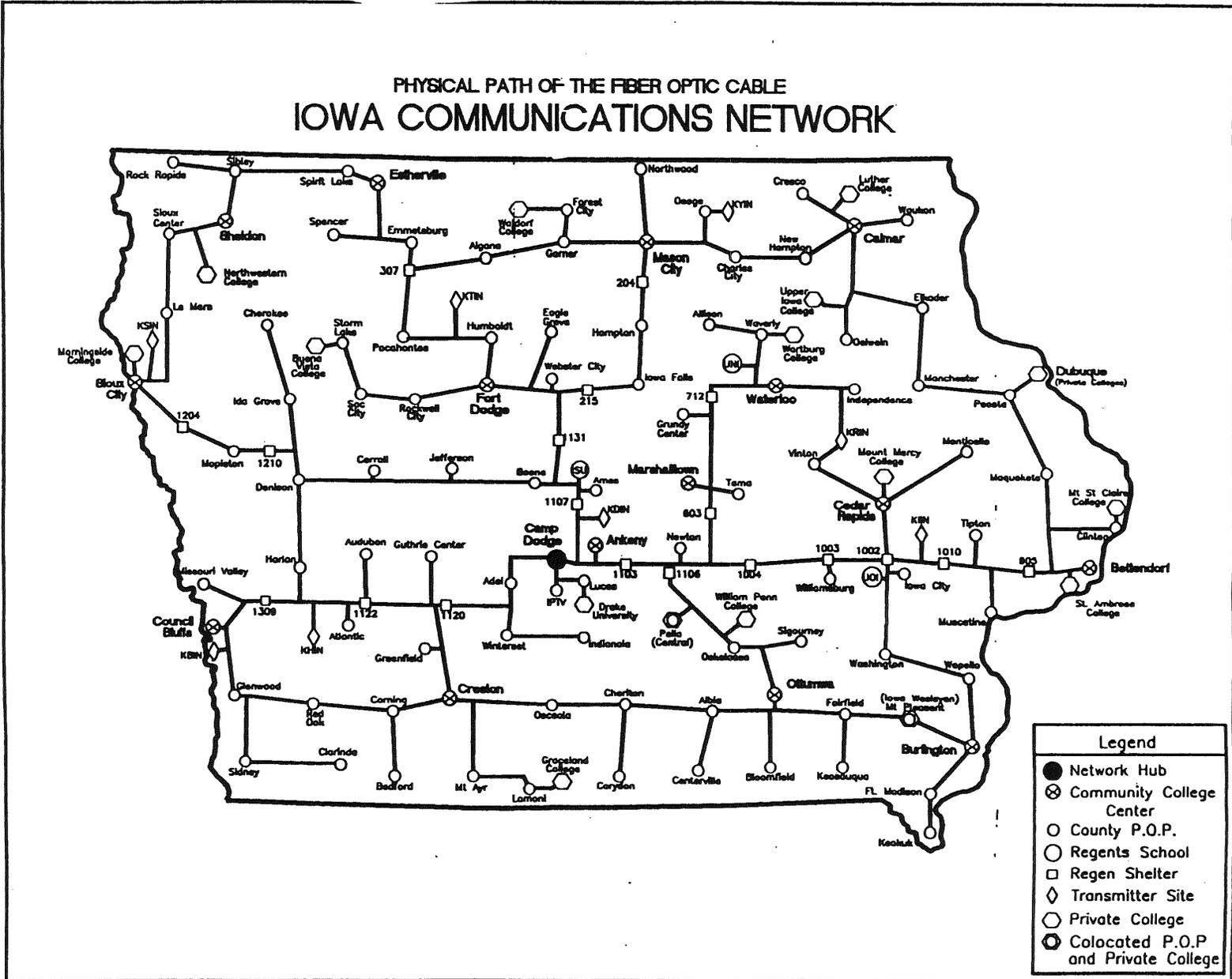
Weekly Cable Placement

Construction Season	Week Ending	Miles of Cable Placed	Cumulative Mileage
1993	8/21/83	-	2,870
1993	8/28/93	-	2,870
1993	9/4/93	-	2,870
1993	9/11/93	4	2,874
1993	9/18/93	2	2,876
1993	9/25/93	23	2,899
1993	10/2/93	11	2,910
1993	10/9/93	2	2,912
1993	10/16/93	4	2,916
1993	10/23/93	6	2,922
1993	10/30/93	2	2,924
1993	11/6/93	-	2,924
1993	11/13/93	2	2,926
1993	11/20/93	2	2,928
1993	11/27/93	2	2,930
1993 Construction season		<u>811</u>	
Total		<u><u>2,930</u></u>	

Source: Kiewit Network Technologies, Inc.

Iowa Communications Network

PHYSICAL PATH OF THE FIBER OPTIC CABLE IOWA COMMUNICATIONS NETWORK



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Iowa Communications Network

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Key Contacts

Department of General Services:

Kathy Williams - Executive Assistant to the Director and
Former Administrator, Communications Division

Tony Crandell - ICN Construction Manager and Current Administrator,
Communications Division

Paul Jacobsen - Engineer, Communications Division
Jerry Gamble - Administrator, Administration Division
Joan Rowley - Accountant
Ken Paulsen - Administrator, Purchasing Division

Iowa Public Television:

Linda Schatz
Pam Johnson
Don Severaid

Management Team:

Ted Chapler
Paul Carlson
Bob Helmick
Ed Stanek (through December 1992)

Other:

Jack Walters, Former Director of DGS
Jerry Anderson, Former Director of DGS
Larry Thorton, Treasurer's Office
Don Deeds, Digital Directions
Stacy Jenkins, Kiewit
Bob Sommerfeld, Kiewit
Representative Wayne McKinney
Karen Jacobi, McLeod
Phil Dunshee, Governor's Office

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Iowa Communications Network
Glossary

- Administrative Traffic** - For the purposes of this report, administrative traffic represents non-educational voice and data communications using the Iowa Communications Network, primarily state agency telephone and computer communications..
- Alternate Routing** - The additional fiber optic cable laid to provide continuous operation for each network user in the event of a break or other disruption in the primary connection
- Backbone** - The backbone includes the HUB, interconnection of the HUB with all Part I endpoints and Part II endpoints throughout the State by digital links for the two-way transmission of 45 megabit video, voice and data for State, education and administrative purposes as defined in Section 18.136(9) Code of Iowa (1989 supp.).
- Bandwidth** - Bandwidth determines the rate at which information can be transmitted across that medium. These rates are measured in bit (bps), kilobits (kbps), megabits (Mbps), or gigabits per second (Gbps). Typical transmission services are 64 Kbps, 1.544 Mbps (T1), and 45 Mbps (T3).
- Change Orders** - Written agreements between the Department of General Services and Kiewit Network Technologies that modified the terms of the original construction contract. These change orders usually resulted in cost increases for additions or enhancements to the Network.
- Codec** - A coder-decoder device which codes analog signals, such as speech, music, or television, into a digital format for transmission over digital networks. The reverse process is used to decode the digital format into analog signals. One is needed at each end of the channel.
- DACCS** - Digital Access Cross-Connect System for switching circuits at DS3 level or lower levels.
- DGS** - Department of General Services.
- DOE** - Department of Education.
- DS0** - Designation for a digital signal for 64 kbps.
- DS1** - Designation for a digital signal for 1.544 Mbps. A digital transmission format in which 24 voice channels are multiplexed into one T1 channel.
- DS3** - Designation for a digital signal for 44.736 Mbps. A telephony term describing the 44.736 Mbps signal carried on a T3 facility.
- FEMA** - Federal Emergency Management Agency.
- Fiber Optics** - The use of thin strands of glass to propagate transmissions signals. The maximum bandwidth at which a fiber optic cable can transmit signals has not yet been determined.
- HUB** - The centralized switching center of the Iowa Communications Network located at Camp Dodge.

Iowa Communications Network
Glossary

ICN - Iowa Communications Network or "Network".

Interactive Video - The capability to transmit and receive two-way (full duplex) video transmissions between originating site and remote classroom(s).

Inter-Exchange Carrier - Carriers that can carry inter-LATA traffic. Long distance telephone companies such as AT&T, MCI, and US Sprint.

Iowa Communications Network Fund - The fund created in the office of the Treasurer of State used to account for State appropriations and other revenues and expenditures of the Network, as authorized under Code of Iowa Section 18.137.

IPT / IPTV - Iowa Public Television.

Letters of Intent - Letters written by the Department of General Services' ICN Construction Manager and/or the Administrator of the Communications Division, to the contractor which authorized the contractor to perform work that was outside the scope of the contract. The letters, which committed the State to additional expenditures in excess of \$8.7 million, were to be followed up with a change order at a later date.

Local Exchange Carrier - Carriers that can carry only intra-LATA traffic. Local telephone companies such as US West, Contel, Centel, and the independent Iowa telephone companies.

Local Tandem Switch - Network equipment located at the HUB to switch voice and data communications among users and on and off the Network.

Management Team - An ad hoc, three member group of individuals who were appointed by the Governor to investigate and evaluate various matters relating to the construction and management of the Network. In addition, they were to coordinate the activities of the agencies involved with the Network.

McLeod Communications - The maintenance provider for the Network.

Narrowcast System Advisory Committee - An advisory committee to the Iowa Public Television Board, composed of members from among the users of the narrowcast system including representatives of institutions under the state Board of Regents, merged area schools, area education agencies, classroom teachers, school district administrators, school district boards of directors, the Department of Economic Development, the Department of Education, and private colleges and universities.

Network - The network consists of the HUB (Camp Dodge, Iowa), interconnection of the HUB with all Part I endpoints (Regional Switching Centers, Regents Institutions and other Part I endpoints) and Part II endpoints (Secondary Switching Centers) throughout the State by digital links for the two-way transmission of 45 megabit video, voice and data for State, education and administrative purposes as defined in Section 18.136 (9) of the Code of Iowa (1989 Supp.).

Phase I - Involved the installation of a Network Control Center at the new Iowa National Guard Armory (the STARC Armory) in Johnston, and the linking of Iowa's three Regent's

Iowa Communications Network
Glossary

universities, 15 community colleges, certain participating private colleges, Iowa Public Television, and the State Capitol Complex.

Phase II - Involved linking the 15 community colleges with points of presence in each of the remaining 84 Iowa counties.

Phase III - Will consist of expanding the Network to other authorized users within the counties such as schools, libraries, hospitals, and other private and governmental users.

Phase I Endpoint - A State provided facility at which: (1) Phase I link and Phase II links are terminated, (2) regional switching functions are provided, and (3) serves as the point of presence for the county in which it is located.

Phase II Endpoint - A State provided facility at which: (1) Phase I link and Phase II links are terminated, (2) switching (secondary) is provided, and (3) serves as the point of presence for the county in which it is located.

POP - Point of Presence is the point where the inter-exchange carriers responsibilities for the line begin and the local exchange carrier's responsibility ends.

Private Agency - Accredited nonpublic schools and nonprofit institutions of higher education eligible for tuition grants.

Public Agency - A state agency, school corporation, city library, regional library as provided in chapter 303B and a county library as provided in chapter 336.

Redundancy - Redundancy is defined as extra fiber pairs in the sheath or trench, backup fiber optic terminal or repeater equipment, battery chargers and batteries and the like which can be manually or automatically switched in to restore a malfunctioning link or maintain functioning of the link in the case of power failure.

Regional Switching Centers - The Phase I endpoints providing interconnectivity for Phase II endpoints and future Phase II and Phase II endpoints.

RFP - Request for Proposal.

Secondary Switching Center - A Phase II endpoint which provides switching capability for future Phase II and Phase III endpoints.

Segment - A portion of the network consisting of one Part I element, a Part I endpoint and all Part II elements associated with the Part I endpoint.

SONET - Synchronous Optical Network is an American and international optical interface utilizing a 5.148 Mbps digital signal as a root base for developing other SONET signals.

STARC Armory - The new Iowa National Guard Armory at Camp Dodge in Johnston, Iowa which houses the control center for the Network.

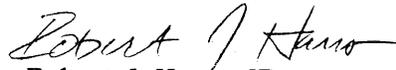
State Communications Network Fund - The fund established in the office of the Treasurer pursuant to Section 18.137 of the Code of Iowa.

Iowa Communications Network

Staff

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